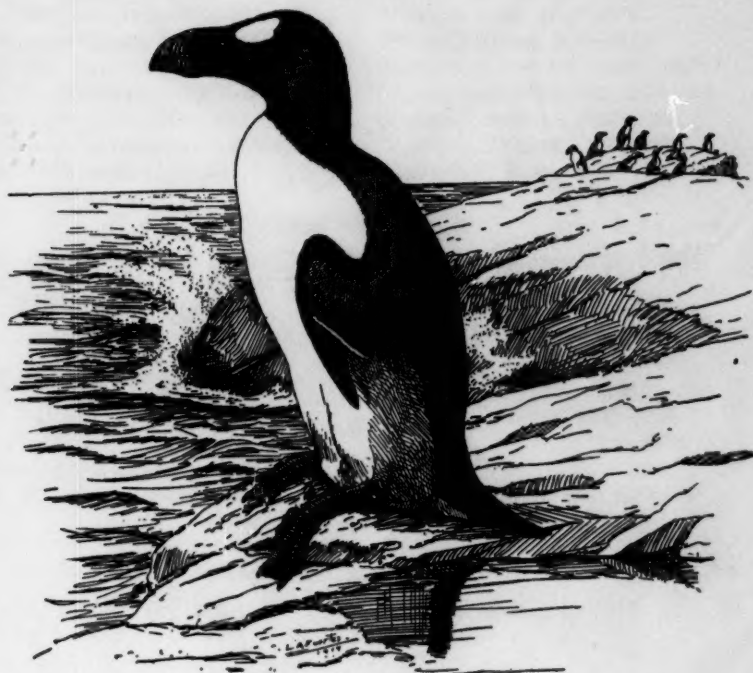


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CONTENTS OF VOLUME 54

NUMBER 1

	PAGE
IN MEMORIAM: WILLIAM HARRY BERGTOLD. By <i>Albert Kenrick Fisher</i> . (Plate 1)...	1
BIRDS OF THE BOWDOIN-MACMILLAN ARCTIC EXPEDITION, 1934. By <i>Alfred O. Gross</i> . (Plates 2-5).....	12
A CYCLE IN NORTHERN SHRIKE EMIGRATIONS. By <i>David E. Davis</i>	43
PARASITES OF THE EUROPEAN STARLING IN ILLINOIS. By <i>Joseph B. Sommer</i>	50
AVIAN HABITATS IN THE THORN-BUSH AREAS OF NATAL. By <i>Raymond B. Cowles</i>	54
SOME ARIZONA BIRD STUDIES. By <i>Herbert Brandt</i>	62
FURTHER NOTES ON THE NESTING OF THE BARN SWALLOW. By <i>Wendell P. Smith</i>	65
EUROPEAN DUNLINS IN NORTH AMERICA. By <i>Ludlow Griscom</i>	70
MIGRATIONS OF THE AMERICAN BRANT (<i>Branta bernicla hrota</i>). By <i>Harrison F. Lewis</i>	73
GENERAL NOTES.—How far can a bird be seen? 96; Hailstorms and avian mortality, 97; Notes from northern Idaho, 97; A colony of Western Grebes, 98; Albino Pied-billed Grebe in Wisconsin, 98; Flamingo seen in Florida, 99; The Flamingo in the Florida Keys, 99; Behavior of a Blue-winged Teal, 99; Golden Eagle in Illinois, 100; Duck Hawk and Sparrow Hawk on the Tortugas, 100; Black Rail breeding in Indiana, 100; Franklin's Gull in Ontario, 101; Sabine's Gull on Long Island, 101; Arctic Three-toed Woodpecker on Long Island, 102; New records for Spanish Honduras, 102; Willow Thrush in the Magdalen Islands, 102; Early nesting of the Cape Sable Seaside Sparrow, 102; Lincoln's Sparrow nesting in Maine, 102; Measurement of growth in the Eastern Chipping Sparrow, 103.	
RECENT LITERATURE.....	105
CORRESPONDENCE.—"Mating" and "Coitus", 114; Local bird names wanted, 114	
NOTES AND NEWS.—Dr. Stone's resignation, 115; Need of an endowment fund for 'The Auk', 115; Ninth International Ornithological Congress, 115	
THE FIFTY-FOURTH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION. By <i>T. S. Palmer</i>	117

NUMBER 2

IN MEMORIAM: HARRY SCHELWALD SWARTH. By <i>Joseph Mailliard</i> . (Plate 6).....	127
LIFE-HISTORY OF THE BLACK-CHINNED JACAMAR. By <i>Alexander F. Skutch</i> . (Plates 7, 8).....	135
ORNITHOLOGY OF THE SECOND BYRD ANTARCTIC EXPEDITION. By <i>Paul A. Siple</i> and <i>Alton A. Lindsey</i>	147
A NONDESCRIPT BLACKBIRD FROM ARIZONA. By <i>Allan Brooks</i>	160
RECENT OBSERVATIONS ON THE IVORY-BILLED WOODPECKER. By <i>Arthur A. Allen</i> and <i>P. Paul Kellogg</i> . (Plates 9-15).....	164

THE STATUS OF MACGILLIVRAY'S SEASIDE SPARROW. By <i>Ivan R. Tomkins</i>	185
A NEST-BUILDING MALE SONG SPARROW. By <i>William E. Schantz</i> . DISCUSSION by <i>Margaret M. Nice</i>	189
A COLLECTION OF BIRDS FROM OMILTEME, GUERRERO. By <i>Ludlow Griscom</i>	192
GENERAL NOTES.—Bird vs. poison sprays, 200; Some post-hurricane records from South Carolina, 200; Fulmar at Meaford, Georgian Bay, Ontario, 200; Snowy Egret in Southern Michigan, 200; Number of contour feathers of <i>Cygnus</i> and <i>Xanthocephalus</i> , 201; Injury-feigning by a Wood Duck, 202; King Eider taken on Illinois River, 203; The Type of <i>Falco cooperii</i> Bonaparte, 203; Dusky Grouse in the Chuskai Mountains of northeastern Arizona and northwestern New Mexico, 203; Young Black Rail banded in Illinois, 204; Willet in Arkansas, 204; Gulls and Sunfish, 204; Short-billed Gull in Massachusetts, 205; Forster's Tern on the Niagara River, 205; Royal Tern in Massachusetts, 206; Black Tern in Maryland, 206; Black Skimmers in New England, 206; Dovekie in South Florida, 207; <i>Simozenops</i> proposed for <i>Anachilus</i> , 208; Arkansas Kingbird on Matinicus Isle, Maine, 208; The Status of <i>Telmatodytes palustris iliacus</i> , 208; Notes on Starling spread and migration, 209; Sycamore Warbler in Massachusetts, 211; Dickcissel at Ipswich, Massachusetts, 211.	
RECENT LITERATURE	212
OBITUARIES.—Thomas Edward Penard, 232; Richard Crittenden McGregor, 234; Frederic Hedge Kennard, 234; William Henry Hoyt, 234.	

NUMBER 3

BEHAVIOR OF BLACK SKIMMERS AT CARDWELL ISLAND, VIRGINIA. By <i>Olin Sewall Pettingill, Jr.</i> (Plates 16, 17)	237
THE COMPANION IN THE BIRD'S WORLD. By <i>Konrad Z. Lorenz</i> . (Introductory note by <i>Francis H. Herrick</i>)	245
LIFE HISTORY OF THE BOAT-TAILED GRACKLE IN LOUISIANA. By <i>E. A. McIlhenny</i> . (Plates 18-20)	274
THE NESTING BALD EAGLES OF SOUTHEASTERN FLORIDA. By <i>Joseph C. Howell</i>	296
ACTIVITY OF THE SCREECH OWL. By <i>Harry A. Allard</i>	300
A COSTA RICAN RACE OF JARDINE'S PYGMY OWL. By <i>Leon Kelso</i>	304
A NEW WOOD OWL FROM SIAM. By <i>Estelle H. Kelso</i>	305
THE CAPE MAY WARBLER IN MAINE. By <i>James Bond</i>	306
LECONTE'S SPARROW BREEDING IN MICHIGAN AND SOUTH DAKOTA. By <i>Lawrence H. Walkinshaw</i> . (Plates 21, 22)	309
ENDOPARASITISM IN RUFFED GROUSE NEAR HANOVER, NEW HAMPSHIRE. By <i>Frank H. Connell</i> and <i>H. M. Doremus</i>	321
A PRELIMINARY LIST OF BIRD WEIGHTS. By <i>Paul A. Stewart</i>	324
THE SPELLING OF COMMON NAMES OF BIRDS. By <i>William H. Cheesman</i> and <i>Paul H. Oehser</i>	333
IN MEMORIAM: FREDERIC HEDGE KENNARD, 1865-1937. By <i>Arthur Cleveland Bent</i>	341
NEW LIGHT ON MARK CATESBY. By <i>Elsa G. Allen, Ph.D.</i> (Plate 23)	349
MORPHOGENESIS OF THE SHOULDER ARCHITECTURE: AVES. By <i>A. Brazier Howell</i>	364
GENERAL NOTES.—Western Grebe in Massachusetts, 376; South American Pied-billed Grebe in the Canal Zone, 379; The Gannets of Funk Island, 379; Double-crested Cormorant breeding in Michigan, 381; American Egret and Black-	

bellied Plover in Delaware in winter, 382; Little Blue Heron in the interior of northern Maine, 382; Maine Records of the Eastern Glossy Ibis, 382; Ring-necked Duck nesting in Maine, 382; King Eider in South Carolina, 383; Tape-worm in young Red-breasted Merganser, 383; Turkey Vultures killed by automobiles, 383; A hybrid between Turkey Vulture and Black Vulture, 384; Mississippi Kite in South Carolina in Winter, 384; A Swainson's Hawk migration, 385; Additional Illinois Golden Eagle records, 385; An Illinois record for the Little Brown Crane, 388; Winter shorebird notes from Massachusetts, 388; Long-tailed Jaeger observed on the Bear River Marshes, Utah, 389; Common Tern and Wilson's Phalarope nesting in northern Indiana, 390; Least Tern in Colorado, 390; Eastern Mourning Dove in Cuba, 391; Smooth-billed Ani in Florida, 391; Hasbrouck's Screech Owl from Kansas, 391; New name for *Otus flammeolus guatemalae* preoccupied, 391; Chimney Swifts in eastern Panama, 392; Swifts at sea, 392; Alder Flycatcher at Pensacola, Florida, 392; Canada Jay breeding in Wisconsin, 392; American Magpie in Missouri and Illinois, 393; Eastern Crows nesting on or near the ground (Plate 24); Elevation of nests of the Western Crow, 394; Varied Thrush at Richmond, New York, 394; Varied Thrush at Clementon, New Jersey, 395; Bicknell's Thrush in Virginia, 395; Parula Warbler in Washington in December, 395; A note used during migration by the Yellow Warbler, 395; Giant Red-wing in New York, 396; Hepburn's Rosy Finch in Maine (Plate 24); Leconte's Sparrow in Clermont County, Ohio, 397; Leconte's Sparrow near Toledo, Ohio, 397; Shufeldt's Junco near Toledo, Ohio, 399.

RECENT LITERATURE	400
NOTES AND NEWS	425
REPORT OF THE COMMITTEE ON BIRD PROTECTION. By H. C. Bryant, Chm.	426

NUMBER 4

NESTING OF THE BAY-BREASTED WARBLER. By Howard L. Mendall. (Plates 25, 26)	429
THE GREATER SNOW GOOSE IN CANADA. By E. F. G. White and Harrison F. Lewis	440
NESTING HABITS OF THE SPOTTED SANDPIPER. By Henry Mousley. (Plates 27, 28)	445
BIRD LIFE ON THE NORTH CAROLINA COAST. By Thomas D. Burleigh	452
BIRDS OBSERVED ON THE COAST OF VIRGINIA AND NORTH CAROLINA. By Allen J. Duval	461
THE VIRGINIA RAIL IN MICHIGAN. By Lawrence H. Walkinshaw. (Plates 29, 30)	464
AUDUBON AND THE DAUPHIN. By Francis H. Herrick	476
NOTES ON AVIAN COCCIDIOSIS. By Donald C. Boughton. (Plate 31)	500
A ROBIN WITH TWO SETS OF TAIL FEATHERS. By Robert M. Stabler. (Plate 32, upper figure)	510
WILLOW PTARMIGAN AT THE QUEBEC ZOOLOGICAL GARDENS. By J. A. Brasseur, D.Sc.V., and Richard Bernard, M.Sc. (Plate 32, lower figure) ..	514
SIZE OF RED BLOOD CORPUSCLES AND THEIR NUCLEUS IN FIFTY NORTH AMERICAN BIRDS. By Paul Bartsch, W. H. Ball, W. Rosenzweig and S. Salman ..	516
ORTHOPEDIC SURGERY ON A WHITE PELICAN. By Elizabeth A. Oehlenschlaeger ...	520
NOTES ON COLORADO BIRDS. By Alfred M. Bailey and Robert M. Niedrach ...	524
A NEW RACE OF FINCH'S PARROT. By Robert T. Moore	528

GENERAL NOTES.—Leach's Petrel off coast of Venezuela, 530; Little Blue Heron trapped by a clam, 530; Little Blue Heron on salt water, 530; Nesting of the Flamingo in the United States, 531; Migrating Snow Geese in northern New Jersey, 532; Greater Snow Goose in New Hampshire, 532; European Widgeon in Florida, 532; European Teal at Lexington, Virginia, 533; Early nesting of the Wood Duck, 533; A Wood Duck marsh in northwestern Iowa, 533; Canvas-back breeding in Iowa, 534; Prairie Sharp-tailed Grouse budding on wild plum, 534; Incubation period of Virginia Rail, 535; Golden Plover in Florida during winter, 536; Western Willet in Ohio, 536; A second North American specimen of the Bar-tailed Godwit, 537; Avocet taken in Ohio, 538; Herring Gull at Barbados, 539; Saw-whet Owl in Lexington, Virginia, 539; Northern Pileated Woodpecker in Hamilton County, Ohio, 539; Status of *Mitrephanes phaeocercus pallidus*, 540; American Magpie taken near Toledo, Ohio, 540; Southern Winter Wren in Virginia, 540; Bohemian Waxwing in Luce County, Michigan, 541; North-south versus northeast-southwest migration of the Starling, 542; A Pine Warbler killed by arsenical spray, 542; Palm Warbler in Bermuda, 543; Cowbird's egg in a Red-wing's nest, 544; European Goldfinch at Hanover, New Hampshire, 544; An Ohio invasion of Leconte's Sparrows, 545; Lapland Longspurs in Wisconsin in summer, 546; Records from the Isles of Shoals, 546; Notes from Vermont, 547; Summer records from Ocean County, New Jersey, 548; Uncommon winter birds in coastal North Carolina, 548.

RECENT LITERATURE.....	550
CORRESPONDENCE.—The type locality of <i>Psittacus alerrimus</i>	572
OBITUARIES.—Charles Holcomb Popenoe; Amos William Butler.....	573
CORRECTIONS.....	574
THE FIFTY-FIFTH MEETING OF THE A. O. U.....	574
INDEX.....	577

LIST OF PLATES

1. William Harry Bergtold (portrait)
2. Cape Chidley on a quiet clear day; The Button Islands, airplane view taken by the Forbes Expedition
3. Murres on a boulder in midst of a nesting colony; Razor-billed Auks
4. Nest and eggs of Northern Eider near Hopedale; Northern Horned Lark incubating its four eggs
5. American Pipit on its nest in the Labrador tundra; nest of the Snow Bunting removed from its rock crevice
6. Harry Schelwald Swarth (portrait)
7. Black-chinned Jacamar, nest site and young
8. Black-chinned Jacamar, young
- 9-15. Ivory-billed Woodpecker, nest site, and adults
16. Black Skimmers feigning injury in the vicinity of their nests
17. Young Black Skimmers; Black Skimmer feeding
18. Boat-tailed Grackles feeding in shallow water
19. Male Boat-tailed Grackle; female Boat-tailed Grackles in sawgrass
20. An island of tules; a Boat-tailed Grackle's nest
- 21, 22. Leconte's Sparrow at the nest
23. A letter from Mark Catesby to Sir Hans Sloane
24. Gross: Hepburn's Rosy Finch in Maine; Aldous: Crow's nest on the ground
- 25, 26. Bay-breasted Warblers at their nest
- 27, 28. Nesting of the Spotted Sandpiper

- 29, 30. Nesting of the Virginia Rail
- 31. Avian coccidiosis
- 32. Robin with two sets of tail feathers; Willow Ptarmigan in Quebec Zoological Garden



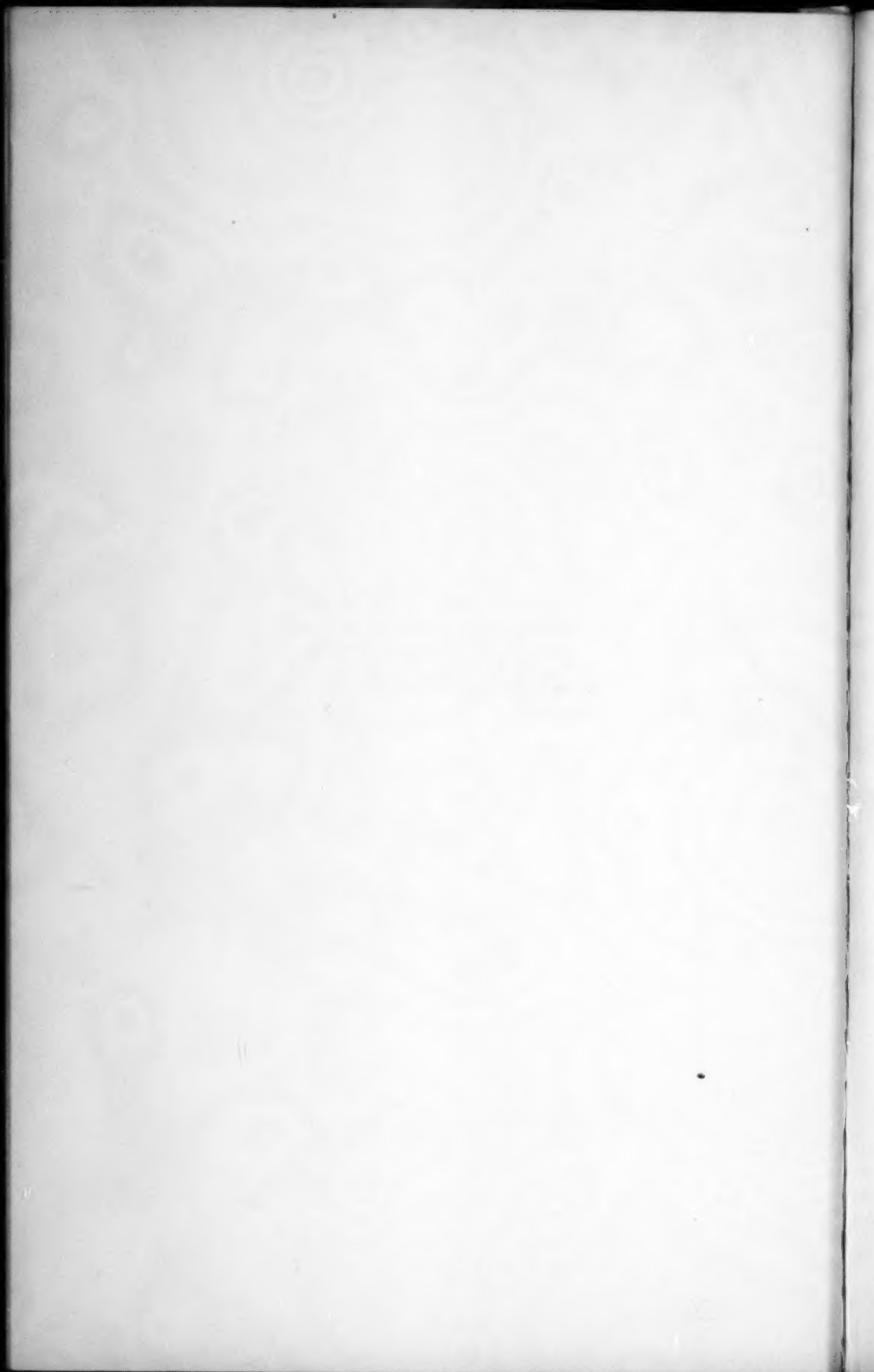
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*STONE, DR. WITMER, Acad. Nat. Sciences, Philadelphia, Pa.....	(1885)	1892
SUTTON, GEORGE MIKSCH, Pebble Hearths, Bethany, W. Va.....	(1910)	1936
TAVERNER, PERCY ALGERNON, National Mus., Ottawa, Ont., Can.....	(1902)	1917
TODD, WALTER EDMOND CLYDE, Carnegie Mus., Pittsburgh, Pa.....	(1890)	1916
VAN ROSSEM, ADRIAN JOSEPH, Calif. Institute Technology, Pasadena,		
Calif.....	(1923)	1934
VAN TYNE, DR. JOSSELYN, Mus. Zoöl., Univ. Mich., Ann Arbor, Mich..	(1922)	1936
*WETMORE, DR. ALEXANDER, U. S. Nat. Mus., Washington, D. C.....	(1908)	1919
ZIMMER, JOHN TODD, Am. Mus. Nat. Hist., New York, N. Y.....	(1908)	1933

FELLOWS EMERITI

ANTHONY, ALFRED WEBSTER, 433 Nutmeg St., San Diego, Calif.....	(1885)	1934
FISHER, PROF. WALTER KENRICK, Hopkins Marine Sta., Pacific Grove,		
Calif.....	(1899)	1920
STEJNEGER, DR. LEONHARD, U. S. Nat. Mus., Washington, D. C.....	(1883)	1911

HONORARY FELLOWS

ARRIGONI DEGLI ODDI, COUNT ETTORE, Univ. of Padua, Padua, Italy..	(1900)	1930
BAKER, EDWARD CHARLES STUART, 6 Harold Road, Upper Norwood,		
London, S. E. 19, England.....	(1918)	1920
BUTURLIN, SERGIUS ALEXANDROVICH, c/o Prof. S. I. Ognev, Zoöl. Mus.,		
1st University, Moscow, U. S. S. R.....	(1907)	1916
CLARKE, DR. WILLIAM EAGLE, 8 Grosvenor St., Edinburgh, Scotland..	(1889)	1921
DABBENE, DR. ROBERTO, Calle Peru 208, Buenos Aires, Argentina.....	(1916)	1918
DELACOUR, JEAN THEODORE, Château de Clères, Seine Inférieure, France	(1920)	1928
EVANS, DR. ARTHUR HUMBLE, Cheviot House, Crowthorne, Berks, Eng-		
land.....	(1899)	1917
GYLDENSTOLPE, COUNT NILS [CARL GUSTAFFERSEN], Naturhistoriska		
Riksmuseum, Vetenskapsakademien, Stockholm 50, Sweden...	(1918)	1934

HAAGNER, ALWIN KARL, Director Jardim Zoöl., Caixa Postal 395, Beira, Portuguese East Africa	(1916) 1918
HALL, ROBERT, Tasmanian Museum, Hobart, Tasmania	(1916) 1923
HELLMAYR, DR. CARL EDUARD, Naturhist. Mus., Burgring 7, Vienna I, Austria	(1903) 1911
JOURDAIN, REV. FRANCIS CHARLES ROBERT, Whitekirk, 4 Belle Vue Road, Southbourne, Bournemouth, England	(1918) 1921
KINNEAR, NORMAN BOYD, Brit. Mus. (Nat. Hist.), Cromwell Road, London, S. W. 7, England	(1931) 1934
KURODA, DR. NAGAMICHI, Fukuyoshi Cho, Akasaka, Tokyo, Japan	(1918) 1921
LÖNNBERG, DR. [AXEL JOHAN] EINAR, Naturhistoriska Riksmuseum, Vetenskapsakademien, Stockholm 50, Sweden	(1916) 1918
LOWE, DR. PERCY ROYCROFT, Brit. Mus. (Nat. Hist.), Cromwell Road, London, S. W. 7, England	(1916) 1920
MATHEWS, GREGORY MACALISTER, Meadway, St. Cross, Winchester, Hants, England	(1911) 1927
MEINERTZHAGEN, COL. RICHARD, 17 Kensington Park Gardens, London, W. 11, England	(1916) 1928
MENEGAUX, DR. HENRI AUGUSTE, Muséum d'Histoire Naturelle, 55 Rue de Buffon, Paris, France	(1916) 1918
PYCRAFT, WILLIAM PLANE, British Museum (Nat. Hist.), Cromwell Road, London, S. W. 7, England	(1902) 1911
REICHENOW, DR. ANTON, Moltkestr. 7, Hamburg 30, Germany	(1884) 1891
ROTHSCHILD, LIONEL WALTER, Lord, Zoölogical Museum, Tring, Herts, England	(1898) 1913
SCLATER, WILLIAM LUTLEY, 10 Sloane Court, Chelsea, London, S. W. 3, England	(1906) 1917
STRESEMANN, DR. ERWIN, Zoöl. Museum, Universität, Invalidenstr. 43, Berlin, N. 4, Germany	(1922) 1930
WITHERBY, HARRY FORBES, Gracious Pond Farm, Chobham, near Woking, Surrey, England	(1921) 1928

CORRESPONDING FELLOWS

ALEXANDER, WILFRID BACKHOUSE, Dept. Zoöl., University Museum, Oxford, England	1921
ALFARO, DON ANASTASIO, San José, Costa Rica	1888
ASHBY, EDWIN, Wittunga, Blackwood, Adelaide, South Australia	1918
BANNERMAN, DAVID ARMITAGE, 7 Pembroke Gardens, Kensington, London, W. 8, England	1916
BATE, MISS DOROTHEA MINOLA ALICE, British Museum (Nat. Hist.), Cromwell Road, London, S. W. 7, England	1920
BATES, GEORGE LATIMER, Timbuctoo, Blasford Hill, Little Waltham, Chelmsford, England	1919
BAXTER, MISS EVELYN VIDA, The Grove, Kirkton of Largo, Fifeshire, Scotland	1919
BEAUFORT, DR. LIEVEN FERDINAND DE, Zoöl. Museum, Amsterdam, Holland	1926
BELCHER, SIR CHARLES FREDERIC, K.B.E., 31 Alexander St., Port of Spain, Trinidad, B. W. I.	(1931) 1934
BERLIOZ, JACQUES, Muséum d'Histoire Naturelle, 55 Rue de Buffon, Paris, France	1923
BERTONI, DR. ARNOLDO DE WINKELREID, Puerto Bertoni, Paraguay	1919

BRINDLEY, MRS. HAROLD HULME, 25 Madingley Road, Cambridge, England.	1920
BUREAU, DR. LOUIS, Ecole de Médecine, 15 Rue Gresset, Nantes, France.	1884
CHASEN, FREDERICK NUTTEN, Raffles Museum, Singapore, Straits Settlements.	1934
CHIGI, PRINCE D. FRANCESCO, Castel Fusano, Rome, Italy.	1932
CHISHOLM, ALEXANDER HUGH, Daily Telegraph, Sydney, N. S. W.	1922
COLLINGE, DR. WALTER EDWARD, The Yorkshire Museum, York, England.	1918
CONTRERAS, MARCEL HENRI FELIX DE, 52 Place Georges Brugmann, Brussels, Belgium.	1923
CSORGEY, TITUS, Director Roy. Hungarian Inst. Ornithology, Herman Otto-ut 15, Budapest II, Hungary.	1932
DE LAYALLE, JOSÉ ANTONIO, Lima, Peru.	1925
DEMENTIEV, GEORGES, Zoöl. Museum, Moscow Govt. University, Moscow 9, U. S. S. R.	1934
DOMANIEWSKI, JANUSZ WITOLD, Polish Zoöl. Museum, Krakowskie-Przedwiescie 26, Warsaw, Poland.	1926
DROST, PROF. DR. RUDOLF, Heligoland, Germany.	1934
DUPOND, CHARLES, Square Prince Charles 21, Bruxelles-Laeken, Belgium.	1932
FERRARI-PEREZ, PROF. FERNANDO, Tacubaya, D. F., Mexico.	1885
GEE, NATHANIEL GIST, Greenwood, S. C.	1919
GHIGI, PROF. ALESSANDRO, R. Università, Bologna, Italy.	1921
GLADSTONE, CAPT. HUGH STEUART, Penpont, Dumfries, England.	1923
GRANT, CAPT. CLAUDE HENRY BAXTER, 58A Ennismore Gardens, London, S. W. 7, England.	1920
GROEBBELS, DR. FRANZ, Physiol. Institut Krankenhaus, Hamburg Eggendorf, Germany.	1933
GROTE, HERMAN, Treudelenburgstrasse 16, Berlin-Charlottenburg, Germany.	1923
HACHISUKA, THE MARQUESS, 1921 Redcliff Road, Los Angeles, Calif. (1927)	1930
HEINROTH, DR. OSKAR A., Director Aquarium, Berlin, Germany.	1932
HELMS, DR. OTTO, Sanatoriet ved Nakkelböllefjord, pres Pejruk, Denmark.	1920
HENNICKE, DR. CARL RICHARD, Gera, Reuss, Germany.	1907
HENSON, HARRY VERNON, c/o Hong Kong and Shanghai Banking Corp., 9 Grace Church St., London, E. C., England.	1888
HORTLING, DR. IVAR JOHANNES, Helsingfors-Brandö, Finland.	1926
HOWARD, HENRY ELIOT, Clarelends, near Stourport, Worcestershire, England.	1930
HULL, ARTHUR FRANCIS BASSET, Box 704, Sydney, New South Wales.	1919
INGRAM, CAPT. COLLINGWOOD, The Grange, Benenden, Cranbrook, Kent, England.	1920
IREDALE, TOM, c/o Australian Museum, Sydney, New South Wales.	1918
KLOSS, CECIL BODEN, Royal Societies Club, 63 St. James' St., London, S. W. 1, England.	1918
LAUBMANN, DR. ALFRED, Zoöl. Staatssammlung, Neuhauser-str. 51, Munich, Germany.	1923
LODGE, GEORGE EDWARD, Hawkhouse, Park Road, Camberley, Surrey, England.	1921
LUCANUS, FRIEDRICH CARL HERMANN VON, Invalidenstrasse 43, Berlin, N. 4, Germany.	1923
LYNES, REAR-ADMIRAL HUBERT, R. N., 169 Cranmer Court, Sloane Ave., London, S. W. 3, England.	1930
MARIA, HERMANO APOLINAR, Instituto de la Salle, Bogota, Colombia.	1921
MATTINGLEY, ARTHUR HERBERT EVELYN, 42 Canterbury Road, Camberwell, Melbourne, Australia.	1921

MITCHELL, SIR PETER CHALMERS, Zoölogical Society, Regent's Park, London, N. W. 8, England.....	1919
MOFFETT, LACY IRVINE, Kiangyin Ku, China.....	1919
MOLTONI, DR. EDGARDO, Milan, Italy.....	1936
MOMIYAMA, TOKU TARO, 1146 Sasazka, Yoyohata-mati, Tokyo, Japan.....	1925
MORGAN, DR. ALEXANDER MATHESON, S. A. Mus., Adelaide, South Australia..	1929
NEUMANN, PROF. OSCAR, Wilmersdorferstrasse 74, Berlin-Charlottenburg III, Germany.....	1928
OLIVER, WALTER REGINALD BROOK, Director Dominion Museum, Wellington, N. Z.....	1923
PALMGREN, DR. PONTUS, Zoöl. Mus., Lönnrotgatan 19, Helsingfors, Finland- (1932).....	1933
PATEFF, DR. PAWEL, Director Zoöl. Gardens, Sofia, Bulgaria.....	1934
PHILLIPS, MONTAGU AUSTIN, 57 St. George's Sq., London, S. W. 1, England....	1919
PONCY, PROF. ROBERT, Lachenal 19, Geneva, Switzerland.....	1932
RAMSDEN, DR. CHARLES THEODORE, Box 146, Guantanamo, Cuba.....	(1912) 1918
RENSCH, BERNHARD, Zoöl. Mus., Invalidenstr. 43, Berlin 4, Germany.....	1932
RIBEIRO, DR. ALIPIO DE MIRANDA, National Museum, Rio Janeiro, Brazil....	1921
RINTOUL, MISS LEONORA JEFFREY, Lahill, Largo, Fifeshire, Scotland.....	1919
ROBERTS, AUSTIN, Transvaal Museum, Pretoria, Transvaal, South Africa....	1920
SASSI, DR. MORIZ, Naturhist. Museum, Burgring 7, Vienna I, Austria.....	1934
SCHAAanning, HANS THOMAS LANGE, Stavanger Museum, Stavanger, Norway..	1923
SCHENK, JAMES, Secy. Roy. Hungarian Inst. Ornith., Herman Otto-ut 15, Budapest II, Hungary.....	1926
SCHOOTEDEN, DR. H., Director Musée Congo Belge, Tervueren, Belgium.....	1934
SETH-SMITH, DAVID, Zoölogical Gardens, Regent's Park, London, N. W. 8, England.....	1920
SKOVGAARD, PETER, Skovbo, pres Viborg, Denmark.....	1926
STEGMANN, BORIS CHARLES, Zoöl. Mus., Acad. Sci., Leningrad, U. S. S. R.....	1932
STEINBACHER, DR. FRIEDRICH, Waldowstr. 19, Berlin-Friedrickshagen, Germany	1934
STONEHAM, LIEUT. COL. HUGH FREDERIC, Parknasilla, East Surrey Coffee Estates, Kitale, Kenya Colony, British East Africa.....	(1928) 1930
SWYNNERTON, CHARLES FRANCIS MASSY, Poste Restante, Dar-es-Salaam, Tanganyika Ter., East Africa.....	1918
TAKA-TSUKASA, PRINCE NOBUSUKA, 1732 Sanchome, Kami-meguro, Meguro-ku, Tokyo, Japan.....	1924
THEEL, DR. JOHAN HJALMAR, Appleviken, Rodluvan 7, Stockholm, Sweden....	1884
THIENEMANN, DR. JOHANNES, Rossitten, Kurische Nehrung, Germany.....	1926
THOMSON, DR. ARTHUR LANDSBOROUGH, 16 Tregunter Road, London, S. W. 10, England.....	1922
TICEHURST, DR. CLAUD BUCHANAN, Saxon House, Appledore, Kent, England..	1922
TICEHURST, NORMAN FREDERIC, 24 Pevensey Road, St. Leonards-on-Sea, Sussex, England.....	1918
TURNER, MISS EMMA LOUISA, 13 Storey's Way, Cambridge, England.....	1920
UCHIDA, DR. SEINOSUKE, No. 1, 7-chome, Aoyama, Kitamachi, Tokyo, Japan..	1919
VAN SOMEREN, DR. VICTOR GURNET LOGAN, Box 658, Nairobi, Kenya Colony, British East Africa.....	1921
WAIT, WALTER ERNEST, Applegarth, Aldbury, near Tring, Herts., England....	1925
WHISTLER, HUGH, Calbec House, Battle, Sussex, England.....	1921
WHITE, CAPT. SAMUEL ALBERT, Wetunga, Fulham, South Australia.....	1919

MEMBERS

*Life Member

- ABBOTT, CLINTON GILBERT, Nat. Hist. Mus., Balboa Park, San Diego, Calif.
(1898) 1931
- ALLEN, FRANCIS HENRY, 215 La Grange St., West Roxbury, Mass. (1888) 1901
- ANDERSON, DR. RUDOLPH MARTIN, Nat. Mus., Ottawa, Can. (1907) 1914
- AUSTIN, DR. OLIVER LUTHER, JR., North Eastham, Cape Cod, Mass. (1925) 1931
- BAILEY, ALFRED MARSHALL, Colorado Museum, Denver, Colo. (1918) 1930
- BAILEY, VERNON (ORLANDO), 1834 Kalorama Road, Washington, D. C. (1887) 1901
- BAILLIE, JAMES LITTLE, JR., Royal Ontario Mus., Toronto 5, Ont. (1923) 1935
- BAILY, WILLIAM LLOYD, 220 E. Lancaster Road, Ardmore, Pa. (1886) 1901
- BARTSCH, DR. PAUL, U. S. Nat. Mus., Washington, D. C. (1896) 1902
- BECK, ROLLO HOWARD, Planada, Merced Co., Calif. (1894) 1917
- BOND, FRANK, 3127 Newark St., N. W., Washington, D. C. (1887) 1901
- BOND, JAMES, Acad. Nat. Sci., Philadelphia, Pa. (1923) 1929
- BOULTON, WOLFRID RUDYERD, Field Museum, Chicago, Ill. (1915) 1929
- BOWDISH, BEECHER SCOVILLE, Demarest, N. J. (1891) 1934
- BOWEN, WILFRID WEDGWOOD, Dartmouth College Museum, Hanover,
N. H. (1926) 1931
- BRAISLIN, DR. WILLIAM COUGHLIN, 425 Clinton Ave., Brooklyn, N. Y. (1894) 1902
- *BRAND, ALBERT RICH, 9 East Ave., Ithaca, N. Y. (1929) 1935
- BRECKENRIDGE, WALTER JOHN, Mus. Nat. Hist., Univ. Minnesota, Min-
neapolis, Minn. (1926) 1935
- BRIMLEY, HERBERT HUTCHINSON, State Museum, Raleigh, N. C. (1904) 1934
- BROOKS, WINTHROP SPRAGUE, Orleans, Mass. (1907) 1917
- BRYANT, DR. HAROLD CHILD, 2907 Rittenhouse St., N. W., Washington,
D. C. (1913) 1918
- BUNKER, CHARLES DEAN, Kansas Univ. Mus., Lawrence, Kans. (1916) 1923
- BURLEIGH, THOMAS DEARBORN, 400 Union Bldg., 837 Gravier St., New
Orleans, La. (1913) 1932
- BURNS, FRANKLIN LORENZO, Berwyn, Pa. (1891) 1901
- BURTCH, VERDI, Branchport, N. Y. (1903) 1934
- BUTLER, AMOS WILLIAM, 52 Downey Ave., Irvington, Indianapolis, Ind. (1885) 1901
- CARRIKER, MELBOURNE ARMSTRONG, JR., Beach Ave. and Wave St.,
Beechwood, N. J. (1907) 1933
- *CHAMBERS, WILLIE LEE, 2068 Escarpa Drive, Eagle Rock, Los Angeles,
Calif. (1907) 1913
- CHERRIE, GEORGE KRUCK, Newfane, Vt. (1891-1912) (1917) 1918
- *CHRISTY, BAYARD HENDERSON, 403 Frederick Ave., Sewickley, Pa. (1922) 1931
- CLARK, DR. HUBERT LYMAN, Mus. Comp. Zool., Cambridge, Mass. (1886) 1902
- COLE, DR. LEON JACOB, Dept. Genetics, Univ. Wis., Madison, Wis. (1908) 1934
- *CONOVER, HENRY BOARDMAN, 6 Scott St., Chicago, Ill. (1920) 1930
- *COOKE, MISS MAY THACHER, 2572 University Place, Washington, D. C. (1915) 1926
- COTTAM, CLARENCE, Biol. Survey, Dept. Agr., Washington, D. C. (1928) 1934
- CRANDALL, LEE SAUNDERS, Zoological Park, New York, N. Y. (1909) 1930
- DANFORTH, STUART TAYLOR, Box 541, Mayaguez, P. R. (1916) 1933
- DAVIDSON, MRS. MARY ELLA McLELLAN, Calif. Acad. Sci., Golden Gate
Park, San Francisco, Calif. (1920) 1932
- DE SCHAUENSEE, RODOLPHE MEYER, Devon, Pa. (1925) 1933

- *DIXON, JOSEPH SCATTERGOOD, Mus. Vert. Zoöl., Univ. Calif., Berkeley, Calif. (1917) 1923
- EIFRIG, PROF. CHARLES WILLIAM GUSTAVE, 1029 Monroe Ave., River Forest, Ill. (1901) 1929
- ERRINGTON, PAUL LESTER, Insectary, Iowa State College, Ames, Iowa . . . (1932) 1936
- FINLEY, WILLIAM LOVELL, R. F. D. 10, Box 426A, Portland, Oregon . . . (1904) 1907
- FORD, EDWARD RUSSELL, Chicago Academy Sciences, Chicago, Ill. (1920) 1936
- GABRIELSON, IRA NOEL, Biol. Survey, Dept. Agr., Washington, D. C. . . . (1912) 1920
- GANIER, ALBERT FRANKLIN, 2507 Ashwood Ave., Nashville, Tenn. (1917) 1934
- GAULT, BENJAMIN TRUE, 424 S. Main St., Glen Ellyn, Ill. (1885) 1903
- GOLDMAN, EDWARD ALPHONSO, Biol. Survey, Washington, D. C. (1897) 1902
- GREENWAY, JAMES COWAN, JR., Mus. Comp. Zoöl., Cambridge, Mass. . . . (1930) 1933
- GREGORY, STEPHEN STRONG, JR., Box N, Winnetka, Ill. (1906) 1934
- HARPER, DR. FRANCIS, 224 S. Chester Rd., Swarthmore, Pa. (1907) 1917
- *HARRIS, HARRY, 5234 Hermosa Ave., Eagle Rock, Los Angeles, Calif. . . (1911) 1919
- HERSEY, FRANK SEYMOUR, Bay Road, Easton, Mass. (1911) 1916
- *HICKS, LAWRENCE EMERSON, Botany Dept., Ohio State Univ., Columbus, Ohio (1929) 1936
- HOLT, ERNEST GOLSAN, Boulevard Apts., 2121 N. Y. Ave., N.W., Washington, D. C. (1911) 1925
- HOWARD, DR. HILDEGARDE, Los Angeles Museum, Exposition Park, Los Angeles, Calif. (1928) 1935
- *HOWELL, ALFRED BRAZIER, Dept. Anatomy, Johns Hopkins Medical School, Baltimore, Md. (1909) 1916
- HUBER, WHARTON, 225 St. Marks Sq., Philadelphia, Pa. (1915) 1922
- HUEY, LAURENCE MARKHAM, Nat. Hist. Mus., Balboa Park, San Diego, Calif. (1920) 1932
- JACOBS, JOSEPH WARREN, 404 S. Washington St., Waynesburg, Pa. (1889) 1904
- JAQUES, FRANCIS LEE, Am. Mus. Nat. Hist., New York, N. Y. (1924) 1934
- JEFFRIES, WILLIAM AUGUSTUS, 50 Congress St., Boston, Mass. (1883) 1901
- JEWETT, STANLEY GORDON, Malheur Bird Refuge, Burns, Oregon (1906) 1926
- *KENDEIGH, DR. SAMUEL CHARLES, Expt. Zoöl. Lab., University Illinois, Champaign, Ill. (1923) 1932
- LEOPOLD, PROF. ALDO, Old Entomological Bldg., 1532 University Ave., Madison, Wis. (1929) 1935
- LEWIS, DR. HARRISON FLINT, Nat. Parks Bureau, Dept. Min. Resources, Ottawa, Can. (1912) 1930
- LIGON, JAMES STOKLEY, Carlsbad, N. Mex. (1912) 1927
- LINSDALE, DR. JEAN MYRON, Mus. Vert. Zoöl., Univ. Calif., Berkeley, Calif. (1922) 1933
- *LYON, WILLIAM ISAAC, 124 Washington St., Waukegan, Ill. (1921) 1925
- MAY, DR. JOHN BICHARD, South Main St., Cohasset, Mass. (1916) 1930
- MAYR, DR. ERNST [WALTER], Am. Mus. Nat. Hist., New York, N. Y. . . (1929) 1936
- MILLER, DR. ALDEN HOLMES, Mus. Vert. Zoöl., Univ. Calif., Berkeley, Calif. (1929) 1933
- MOORE, ROBERT THOMAS, R. R. No. 1, Box 28A, Pasadena, Calif. (1898) 1914
- MOUSLEY, WILLIAM HENRY, 4073 Tupper St., Westmount, Montreal, Can. . . . (1915) 1926
- MUNRO, JAMES ALEXANDER, Okanagan Landing, B. C., Can. (1913) 1926
- MURIE, OLAUS JOHAN, Jackson, Wyo. (1913) 1934

- MURRAY, REV. JOSEPH JAMES, D.D., 6 White St., Lexington, Va. (1928) 1936
- *NAUMBURG, MRS. WALTER WEHLE, 121 E. 64th St., New York, N. Y. (1916) 1924
- NICE, MRS. MARGARET MORSE, 5708 Kenwood Ave., Chicago, Ill. (1920) 1931
- NICHOLS, JOHN TREADWELL, Am. Mus. Nat. Hist., New York, N. Y. (1901) 1910
- NORTON, ARTHUR HERBERT, Mus. Nat. Hist., 22 Elm St., Portland,
Maine. (1890) 1902
- PEARSON, DR. THOMAS GILBERT, 2257 Loring St., New York, N. Y. (1891) 1902
- PETERSON, ROGER TORY, Nat. Assn. Aud. Soc., 1775 Broadway, New
York, N. Y. (1929) 1935
- RATHBUN, SAMUEL FREDERICK, Apt. 105, 906 Summit Ave., Seattle, Wash.
(1893) 1902
- *RIVES, DR. WILLIAM CABELL, 1702 Rhode Island Ave., Washington,
D. C. (1885) 1901
- *ROGERS, CHARLES HENRY, East Guyot Hall, Princeton, N. J. (1904) 1921
- ROWAN, PROF. WILLIAM, Univ. Alberta, Edmonton, Alta., Can. (1920) 1927
- SAUNDERS, ARETAS ANDREWS, 48 Longview Ave., Fairfield, Conn. (1907) 1920
- SAVAGE, JAMES, 1048 Ellicott Sq., Buffalo, N. Y. (1895) 1934
- SETON, ERNEST THOMPSON, Box 830, Santa Fé, N. Mex. (1883) 1901
- SHAVER, PROF. JESSE MILTON, Peabody College, Nashville, Tenn. (1924) 1932
- *SHERMAN, MISS ALTHEA ROSINA, National, via McGregor, Iowa. (1907) 1912
- *SHIRAS, HON. GEORGE, 3d, 4530 Klinge St., Wesley Heights, Wash-
ington, D. C. (1907) 1915
- SIMMONS, GEORGE FINLAY, 2903 Edgehill Road, Cleveland Heights, Ohio (1910) 1923
- SNYDER, LESTER LYNNE, Royal Ont. Mus., Toronto 5, Ont., Can. (1919) 1929
- SOPER, JOSEPH DEWEY, 827 Riverwood Ave., Fort Garry, Winnipeg, Man. (1918) 1933
- SPRUNT, ALEXANDER, JR., R. F. D. 1, Charleston, S. C. (1923) 1928
- STEPHENS, FRANK, Nat. Hist. Mus., Balboa Park, San Diego, Calif. (1883) 1901
- STEPHENS, PROF. THOMAS CALDERWOOD, Morningside College, Sioux
City, Iowa. (1909) 1920
- STONER, DR. DAYTON, N. Y. State Museum, Albany, N. Y. (1922) 1935
- STORER, DR. TRACY IRWIN, Div. Zool., Univ. Calif., Davis, Calif. (1916) 1922
- STREET, JOHN FLETCHER, 1120 Locust St., Philadelphia, Pa. (1908) 1928
- STRONG, DR. REUBEN MYRON, 5840 Stoney Island Ave., Hyde Park
Sta., Chicago, Ill. (1889) 1903
- *STUART, GEORGE HAY, 3d, Broughton Lane, Villa Nova, Pa. (1913) 1928
- SWENK, MYRON HARMON, 1410 N. 37th St., Lincoln, Nebr. (1904) 1920
- TOWNSEND, DR. CHARLES HASKINS, Aquarium, Battery Park, New York,
N. Y. (1883) 1901
- *TYLER, DR. WINSOR MARRETT, 112 Pinckney St., Boston, Mass. (1912) 1917
- URNER, CHARLES ANDERSON, 596 Westminster Ave., Elizabeth, N. J. (1920) 1933
- VOGT, WILLIAM, 609 114th St., New York, N. Y. (1928) 1936
- WARREN, EDWARD ROYAL, 1511 Wood Ave., Colorado Springs, Colo. (1902) 1910
- WESTON, FRANCIS MARION, U. S. Naval Air Station, Pensacola, Fla. (1925) 1933
- WHITE, FRANCIS BEACH, St. Paul's School, Concord, N. H. (1891) 1925
- WILLETT, GEORGE, Los Angeles Museum, Exposition Park, Los Angeles,
Calif. (1912) 1913
- *WILLIAMS, ROBERT WHITE, Biol. Survey, Washington, D. C. (1900) 1918
- *WOOD, DR. CASEY ALBERT, 7 W. Madison St., Chicago, Ill. (1917) 1921
- WOOD, NORMAN ASA, Mus. Univ. Mich., Ann Arbor, Mich. (1904) 1912
- WRIGHT, DR. ALBERT HAZEN, Upland Road, Ithaca, N. Y. (1906) 1919
- WYNNE-EDWARDS, PROF. VERO COPNER, McGill Univ., Montreal, Can. (1930) 1936

ASSOCIATES

*Life Associate

**Honorary Life Associate

ABBEY, GERALD FAY, Cottonwood, Minn.....	1924
ABBOTT, CYRIL EDWARD, 78 E. Woodruff St., Columbus, Ohio.....	1934
ABBOTT, MISS HARRIET, P. O. Box 244, Fryeburg, Maine.....	1918
ABBOTT, MRS. LAURA WOODWARD, R. D. 2, Bristol, Pa.....	1933
*ACHILLES, MRS. GERTRUDE STRONG, Morgan Hill, Calif.....	1925
ACWORTH, CAPT. BERNARD, R.N., 24 Essex St., Strand, London, England.....	1933
ADAMS, BENJAMIN, P. O. Box 42, Wethersfield, Conn.....	1911
ADAMS, DR. CHARLES EVERETT, 29 W. Broadway, Bangor, Maine.....	1922
ADAMS, JOHN, J. P., Raunds, Northamptonshire, England.....	1931
ADAMS, WILLIAM CLARK, Fish & Game Div., Dept. Conservation, State Office Bldg., Albany, N. Y.....	1920
ADAMS, DR. ZABDIEL BOYLSTON, 43 Cottage Farm Road, Brookline, Mass.....	1908
ADRIEN, REV. FRÈRE, C.S.C., Université de Montreal, Montreal, Can.....	1933
AHERN, GEORGE STUART, 8 St. Denis Ave., Quebec, Que., Can.....	1931
AHRENS, DR. THEODOR GEORGE, Hohenzollerndamm 160 ft., Berlin, Wilmers- dorf, Germany.....	1920
AITKIN, ANDREW DRUMMOND, JR., 446 Hill Ave., Pampa, Texas.....	1933
ALDRICH, JOHN WARREN, Cleveland Mus. Nat. Hist., 2717 Euclid Ave., Cleve- land, Ohio.....	1929
*ALEXANDER, MISS ANNIE MONTAGUE, Box 248, Suisun City, Calif.....	1911
ALEXANDER, DONALD CHILD, 18 Hurd St., Lowell, Mass.....	1936
ALEXANDER, FRANK McDANIEL, Box 95, Wellington, Kans.....	1933
ALLARD, HARRY ARDELL, 425 West Wing, Dept. Agr., Washington, D. C.....	1929
ALLEN, MRS. ARTHUR AUGUSTUS, 208 Kline Road, Ithaca, N. Y.....	1935
ALLEN, MRS. AMELIA SANBORN, 37 Mosswood Road, Berkeley, Calif.....	1919
ALLEN, ARTHUR FRANCIS, 108 Terrace Apts., Sioux City, Iowa.....	1919
ALLEN, DEVERE, Wilton, Conn.....	1925
ALLEN, DURWARD LEON, 2609 Florida Drive, Fort Wayne, Ind.....	1931
ALLEN, MRS. J. OWEN, 4319 Hueco St., El Paso, Texas.....	1935
ALLEN, PHILIP FARLEY, 406 High St., Williamsport, Pa.....	1931
ALLEN, ROBERT PORTER, Nat. Assn. Audubon Soc., 1775 Broadway, New York, N. Y.....	1933
ALLEN, WALTER FOX, 11 Thurmont Rd., Caldwell, N. J.....	1925
ALLERT, OSCAR PAUL, R. D. 1, McGregor, Iowa.....	1923
ALLISON, WM. HENRY, 20 Leroy St., Potsdam, N. Y.....	1935
AMADON, DEAN, Farmington, Conn.....	1930
AMMANN, GEORGE ANDREW, Mus. Zool., Ann Arbor, Mich.....	1933
ANDERSON, ANDERS HAROLD, Route 2, Box 105-C, Tucson, Ariz.....	1932
ANDERSON, CHARLES JOHN, 2033 Wilbraham Rd., Springfield, Mass.....	1922
ANDERSON, WILLIAM, South Park, Merriam, Kans.....	1925
ANDREWS, ARTHUR ALLEN, 362 Augustine St., Rochester, N. Y.....	1924
ANGELL, WALTER ALLEN, 33 Westminster St., Providence, R. I.....	1901
ANGUS, H. L., 1327 Spring St., Quincy, Ill.....	1936
APFLEGATE, WILSON G. HUNT, Rhinebeck, N. Y.....	1934
APPLETON, HENRY LEWIS, Twin Spring Farm, Penllyn, Pa.....	1929
ARCHBOLD, RICHARD, Am. Mus. Nat. Hist., New York, N. Y.....	1930
ARCHIBALD, MRS. W. P., Route 1, Box 458, Santa Cruz, Calif.....	1930

ARNOLD, MISS CORDELIA H., 17 No. Hanover Ave., Atlantic City, N. J.....	1936
*ARNOLD, EDWARD WILLIAM CAMERON, Box 909, Punta Gorda, Fla.....	1929
ARNOLD, ELTING, 12 Whitehouse Ave., Poughkeepsie, N. Y.....	1934
ARNOLD, JOHN RONALD, 114 Sage Road, Ithaca, N. Y.....	1936
ARNOLD, MRS. MARY HAZEN, Haddam, Conn.....	1936
ARNOTT, HENRY GRAHAM, R. R. 2, Freeman, Ont., Canada.....	1935
ARTHUR, PAUL HAMILTON, West 231st St., Spuyten Duyvil, New York, N. Y....	1933
ARTHUR, STANLEY CLISBY, 1309 State St., New Orleans, La.....	1916
ASCHEMEIER, CHARLES ROBERT, U. S. Nat. Mus., Washington, D. C.....	1931
ASTLEY, ARTHUR, Freshfield, Ambleside, England.....	1928
ATWELL, GEORGE C., Strafford, N. H.....	1936
AUSTIN, DR. OLIVER LUTHER, Tuckahoe, Westchester Co., N. Y.....	1930
AVERBACH, BERTRAM FREDERICK, 2173 Cummington Rd., Cleveland, Ohio....	1924
AYLMER, CAPT. EDWARD ARTHUR, R.N., Poynings, Uffenline, Devon, England	1935
AYER, MRS. [NATHAN] EDWARD, 1300 Hillcrest Drive, Pomona, Calif.....	1924
BABCOCK, DR. HAROLD LESTER, 16 Woodleigh Road, Dedham, Mass.....	1926
BABCOCK, MISS MYRTLE EVERTS, 655 Merrick Ave., Detroit, Mich.....	1931
BACK, MRS. MARY COOPER, 1015 So. 12th Ave., Maywood, Ill.....	1934
BACON, FRANCIS LLEWELLYN, 22 Waterman Ave., Chestnut Hill, Philadelphia, Pa.....	1917
BAERG, PROF. WILLIAM J., Exp. Sta., Univ. Ark., Fayetteville, Ark.....	1924
*BAGG, AARON CLARK, 72 Fairfield Ave., Holyoke, Mass.....	1916
BAILEY, GEORGE JARBEAU, Walden, Colo.....	1930
BAILEY, PROF. GUY ANDREW, State Normal School, Geneseo, N. Y.....	1910
BAILEY, MRS. HENRY MOORE, 511 23d St., Sioux City, Iowa.....	1922
BAILEY, JOHN WENDELL, Univ. Richmond, Va.....	1925
BAILEY, W. W., Zool. Dept., Blacksburg, Va.....	1936
BAIRD, DONALD CREIGHTON, JR., Maple Lane, Shields, Pa.....	1935
BAIRD, MISS KATHARINE BRUCE, 815 Webster St., Washington, D. C.....	1918
BAIRD, ROBERT LOGAN, 279 Oak St., Oberlin, Ohio.....	1921
BAKER, JOHN HOPKINSON, 1165 Fifth Ave., New York, N. Y.....	1911
BAKER, WILLIAM CALVIN, 223 West Pershing St., Salem, Ohio.....	1930
BALDWIN, MRS. HARRY LEVERETT, 6335 Kimbark Ave., Chicago, Ill.....	1924
BALES, DR. BLENN RIFE, 149 W. Main St., Circleville, Ohio.....	1907
BALL, EDWIN W., U. S. Soil Erosion Service, Coon Valley, Wis.....	1934
BALL, DR. JOSEPH PRICE, 5001 Frankford Ave., Philadelphia, Pa.....	1911
BALL, WILLIAM HOWARD, 1861 Ingleside Terrace, N. W., Washington, D. C....	1923
BANFIELD, FRANK ALEXANDER, 932a Avenue Road, Toronto, Ont., Canada...	1935
BARBER, PROF. BERTRAM ALPHA, 350 West St. North, Hillsdale, Mich.....	1920
BARBER, GEORGE W., 56 Hillhouse Ave., New Haven, Conn.....	1932
BARLOW, HENRY HOYT, 1704 Hinman Ave., Evanston, Ill.....	1921
BARNARD, MRS. BEULAH GUGGENHEIM, 420 Park Ave., New York, N. Y.....	1935
BARNARD, THEODORE WINTHROP, 46 Norfolk Road, Arlington, Mass.....	1921
BARNES, CLAUDE TEANCUM, 359 Tenth Ave., Salt Lake City, Utah.....	1908
**BARNES, RICHARD MAGOON, Lacon, Ill.....	1889
BAROODY, MRS. ELIYA TANNUS, 3130 Wenonah Ave., Berwyn, Ill.....	1927
BARRETT, CHARLES HORATIO MATCHETT, 1339 Valley Place, S. E., Washington, D. C.....	1912
BARRETT, HAROLD LAWRENCE, 30 State St., Boston, Mass.....	1909
BARROWS, WALTER LORING, 23 S. West College, Princeton, N. J.....	1934

BARTEL, KARL EMIL EDGAR, 2528 W. Collins St., Blue Island, Ill.	1934
BARTLETT, GUY, Rosedale Rd., R. D. 1, Schenectady, N. Y.	1932
BARTON, ROGER AVERY, Loree House, Washington Valley Rd., Morristown, N. J.	1935
BARTRAM, EDWIN BUNTING, Bushkill, Pike Co., Pa.	1913
BARTRAM, JOHN, Route 2, West Chester, Pa.	1924
BASCOM, HUBERT PARKINSON, Stockton, St. Michael, Barbados, B. W. I.	1922
BASKETT, CECIL M., 611 Mutual Life Bldg., Seattle, Wash.	1933
BASNER, HARRY, 33 W. 26th St., New York, N. Y.	1927
BASSETT, FRANK NEWTON, 11001 Euclid Ave., Cleveland, Ohio	1919
BASSETT, MRS. VICTOR HUGO, 1010 E. Park Ave., Savannah, Ga.	1927
BATCHELDER, MRS. CHARLES FOSTER, Peterborough, N. H.	1930
BATES, CHARLES E., Box 34, East Wareham, Mass.	1936
BATTON, CHARLES HUSTON, 2125 Cottage Grove Ave., Des Moines, Iowa.	1934
BAUMGARTNER, FREDERICK MILTON, 629 E. Grand River, East Lansing, Mich.	1930
BAUMGARTNER, MRS. MARGUERITE HEYDWEILLER, 629 E. Grand River, East Lansing, Mich.	1932
BAY, JENS CHRISTIAN, The John Crerar Library, 86 E. Randolph St., Chicago, Ill.	1931
BAYNARD, OSCAR EDWARD, P. O. Box 104, Plant City, Fla.	1924
BEACH, DR. CHARLES COFFING, 54 Woodland St., Hartford, Conn.	1922
BEADEL, HENRY LUDLOW, Route 1, Tallahassee, Fla.	1926
BEAL, CLARENCE MARVIN, 184 Stowe St., Jamestown, N. Y.	1929
BEALS, MRS. ALFRED TENNYSON, 5833 85th St., Elmhurst, L. I., N. Y.	1928
BEAMER, LLOYD HENRY, Box 344, Meaford, Ont., Canada.	1935
BEARDSLEE, CLARK SMITH, 132 McKinley Ave., Kenmore, N. Y.	1930
BEATTY, HARRY A., Box 472, Christiansted, St. Croix, Virgin Ids.	1936
BECK, HERBERT HUEBENER, Lititz, Lancaster County, Pa.	1921
BECK, JOSEPH NICHOLAS, Remsen, Iowa.	1923
*BEDELL, MRS. LAUREL MAY, 1620 Mass. Ave., N. W., Washington, D. C.	1929
BEE, ROBERT GEORGE, 81 E. Center St., Provo, Utah	1926
BEED, WATSON E., Waubay Mig. Waterfowl Refuge, Waubay, S. Dak.	1936
BEHLE, WILLIAM HARROUN, Mus. Vert. Zool., Univ. of Calif., Berkeley, Calif.	1934
*BELKNAP, JOHN BALCOM, Masonic Temple Bldg., Gouverneur, N. Y.	1927
BELL, MRS. CHARLES CONKLIN, Box 194, Saratoga, Calif.	1929
BELL, DR. WILLIAM BONAR, 803 Rittenhouse St., Washington, D. C.	1912
BELLROSE, FRANK CHAPMAN, 1220 W. Madison St., Ottawa, Ill.	1934
BENCHLEY, MRS. BELLE JENNINGS, Zool. Gardens, Balboa Park, San Diego, Calif.	1930
BENNETT, HENRY STANLEY, 111 Forest St., Oberlin, Ohio.	1929
BENNETT, LOGAN JOHNSON, Iowa State College, Zool. Dept., Ames, Iowa	1934
BENNETT, THOMAS, 249 Cemetery Road, Lidget Green, Bradford, Yorkshire, England	1930
BENNETT, WALTER WALDO, Arnold's Park, Iowa.	1924
BENNETT, RUDOLF, Dept. Zool., Univ. of Missouri, Columbia, Mo.	1932
BENSON, DIRCK, 422 Eddy St., Ithaca, N. Y.	1935
BENSON, FRANK WESTON, 14 Chestnut St., Salem, Mass.	1920
BENSON, SETH BERTRAM, Mus. Vert. Zool., Univ. Calif., Berkeley, Calif.	1928
BERGNER, HAROLD J., 420 Warwood Ave., Wheeling, West Va.	1935
BERKHEIMER, DR. DAVID, 1514 North 11th St., Reading, Pa.	1932
BEROLZHEIMER, DANIEL DAVID, JR., 234 Woodmere Blvd. No., Woodmere, N. Y.	1934

BERRIE, ALBERT WILLARD, 140 State St., Presque Isle, Maine	1933
BERRIE, MRS. KENNETH GORDON, c/o Board of Trade, Box 8, Brunswick, Ga.	1930
BERRY, ELVERTON CLOUTMAN, Box 234, Conway, N. H.	1924
BERRYMAN, ROBERT NORMAN, Box 24, 26 St. Vincent St., Port-of-Spain, Trinidad, B. W. I.	1934
BICKING, CHARLES ALBERT, 1006 W. 8th St., Wilmington, Del.	1933
BIERMAN, WILLEM HENDRICK, Blesboklaan, 6, Hilversum, Holland	1928
*BIGELOW, MRS. ARCHIBALD PIERCE, 270 Wayne Ave., Oakland, Calif.	1919
BIGELOW, HOMER LANE, The Farm, Windy Row, Peterborough, N. H.	1902
BIGELOW, DR. LYMAN FISHER, 80 Winter St., Norwood, Mass.	1914
BIRCKHEAD, HUGH, 433 Monterey Ave., Pelham Manor, N. Y.	1936
BIRD, MRS. F. G., 123 Pall Mall, London, S. W., 1, England	1933
BIRD, DR. RALPH DURHAM, Box 250, Brandon, Man., Can.	1927
BIRKELAND, HENRY, R. R. No. 1, Nevada, Iowa	1933
BISHOP, SHERMAN CHAUNCEY, Dept. Zoölogy, Univ. Rochester, Rochester, N. Y.	1919
BLACK, CHARLES THEODORE, 3836 Lowell Ave., Chicago, Ill.	1933
BLACK, IRVING, 1 No. Locust Ave., Long Branch, N. J.	1935
**BLACKWELDER, ELIOT, Box N, Stanford University, Calif.	1895
BLAIN, DR. ALEXANDER WILLIS, 494 Lodge Drive, Detroit, Mich.	1929
BLAKE, MRS. CHARLES HENRY, Mass. Inst. Technology, Cambridge, Mass.	1934
BLAKE, MRS. EDWIN TYLER, Arlington Ave. & Rincon Rd., Berkeley, Calif.	1927
BLAKE, ROBERT EMMET REID, Field Museum, Chicago, Ill.	1933
BLAKE, DR. SIDNEY FAY, Bur. Plant Industry, Dept. Agr., Washington, D. C. (1910-16)	1923
BLANCHARD, FRANK NELSON, Dept. Zoöl., Univ. Mich., Ann Arbor, Mich.	1924
BLICKENSDECKER, CLARK, 866 Grant St., Denver, Colo.	1929
BLIDENSTEIN, LOUIS, Parkstation, Waynesboro, Va.	1929
BLINCOE, BENEDICT JOSEPH, Rt. 13, Dayton, Ohio	1921
BLOOMFIELD, MRS. CHARLES C., 729 Michigan Ave. West, Jackson, Mich.	1901
BLOUGH, MRS. HELEN DOLMAN, Snyder Hall, Colo. State College, Greeley, Colo.	1931
BOARDMAN, MISS ELIZA DENNIE, 416 Marlborough St., Boston, Mass.	1906
BODINE, MRS. DONALDSON, 4 Mills Place, Crawfordsville, Ind.	1916
BODINE, MISS MARGARET LAMB, 1901 Walnut St., Philadelphia, Pa.	1927
BOEHNER, REGINALD STEPHENS, Syracuse Univ., Syracuse, N. Y.	1919
BOEHRER, CHARLES ANDREW, 500 St. John's Place, Brooklyn, N. Y.	1933
BOESEL, MARION WATERMAN, R. D. 2, Oxford, Ohio	1922
BOETTNER, HENRY, 127 No. Murat St., New Orleans, La.	1936
BOGARDUS, MISS CHARLOTTE, Round Lake, Saratoga Co., N. Y.	1909
BOGGS, MISS MARION ALEXANDER, Rt. 1, Waynesville, N. C.	1924
BOHN, HERMAN L., 33-29 171st Street, Flushing, N. Y.	1934
BOLT, BENJAMIN FRANKLIN, 5300 Brookside Blvd., Kansas City, Mo.	1909
BOOK, MISS LOIS ADELAIDE, 733 Franklin St., Columbus, Ind.	1928
BOOK, DR. RODNEY DENT, Corning, Ohio	1931
BORDEN, KNOX, 1669 W. Acacia Ave., Stockton, Calif.	1931
BORELL, ADREY EDWIN, Nat. Park Service, Box 1711, Santa Fe, N. M.	1927
BORROR, DONALD JOYCE, Dept. Zool., Ohio State Univ., Columbus, Ohio.	1936
BOSSON, CAMPBELL, 30 State St., Boston, Mass.	1906
BOURNE, THOMAS LATHROP, 262 Long Ave., Hamburg, N. Y.	1935
BOUSLOG, DR. JOHN SAMUEL, 6210 E. 17th Ave., Denver, Colo.	1930
BOWDISH, MRS. BEECHER SCOVILLE, Demarest, N. J.	1902

BOWEN, MISS ALICE MABEL, 437 Central St., Springfield, Mass.	1929
BOYCE, JAMES GARFIELD, Box 519, Texarkana, Texas	1923
BOYLE, ASHLEY DOUGLAS, 1001 E. South Temple St., Salt Lake City, Utah	1921
BRACKEN, MRS. HENRY MARTYN, 999 College Ave., Claremont, Calif.	1897
BRADLEY, MISS ANNA PENFIELD, 352 Whitney Ave., New Haven, Conn.	1933
BRADLEY, JOSEPH MANTON, 111 Conant Rd., Weston, Mass.	1936
BRADT, HERBERT SCHUYLER, JR., 212 E. 48th St., New York, N. Y.	1930
*BRALY, JOHN CLAUDE, DePoe Bay, Oregon	1926
*BRAND, MRS. ALBERT RICH, 9 East Ave., Ithaca, N. Y.	1934
*BRANDRETH, COURTENAY, Ossining, N. Y.	1905
BRANDRETH, MISS ELEANOR M., Ossining, N. Y.	1933
BRANDT, HERBERT WILLIAM, 11945 Carlton Road, Cleveland, Ohio	1915
BRASSARD, DR. J. A., Quebec Zoöl. Gardens, Charlesbourg, Que., Can.	1935
BRAUN, HOWARD WYLIE, 1413 Louisiana Ave., N. W., Canton, Ohio	1936
BRAUND, FRANK WILLIAM, 1022 Central Ave., Cleveland, Ohio	1935
BRAUNER, JOSEPH, 426 Hattal Ave., Bridgeport, Conn.	1936
BREDER, CHARLES MARCUS, JR., Aquarium, Battery Park, New York, N. Y.	1919
BRENNAN, ANDREW JAMES, 800 Cathedral Place, Richmond, Va.	1933
BRENNAN, BERNARD P., 554 St. John's Place, Brooklyn, N. Y.	1933
BRERETON, DR. EWART LOUNT, Box 99, Barrie, Ont., Can.	1935
BRESLAU, LEO ARTHUR, 480 Canal St., New York, N. Y.	1932
BRETSCH, CLARENCE, 6201 East 4th Ave., Gary, Ind.	1924
BRIDGE, CHARLES CONRAD, 1938 Ryder St., Brooklyn, N. Y.	1934
BRIGGS, MRS. EDSON WORCESTER, 7760 16th St., N. W., Washington, D. C.	1928
BRIGHT, STANLEY, R. D. 2, Reading, Pa.	1921
BRISTOL, MISS FRANCES LOUISA, Hotel Bossert, 98 Montague St., Brooklyn, N. Y.	1921
BRITTEN, GEORGE SIDNEY, 807 Walnut Ave., Syracuse, N. Y.	1932
BROCKNER, WINSTON WILLIAM, 175 Dutton Ave., Buffalo, N. Y.	1936
BRODE, DR. HOWARD STIDHAM, 433 E. Alder St., Walla Walla, Wash.	1923
BRODKORB, WILLIAM PIERCE, Mus. Zool., Univ. Mich., Ann Arbor, Mich.	1925
BRODRICK, HAROLD JAMES, Carlsbad Caverns Nat. Park, Carlsbad, N. M.	1935
BROKAW, HOWARD PYLE, 614 Mt. Prospect Ave., Newark, N. J.	1933
BROLEY, CHARLES LAVELLE, 842 Corydon Ave., Winnipeg, Man., Can.	1926
BRONSON, BARNARD SAWYER, 46 Lenox Ave., Albany, N. Y.	1920
BROOKS, ALONZO BEECHER, Ogleby Park, Wheeling, W. Va.	1933
BROOKS, B. L., 19 Noel St., Ottawa, Can.	1936
BROOKS, DR. EARL, Noblesville, Ind.	1924
**BROOKS, REV. EARLE AMOS, 166 Plymouth Rd., Newton Highlands, Mass.	1892
BROOKS, MISS MARGARET, Shore Road, Old Greenwich, Conn.	1933
BROOKS, MAURICE GRAHAM, Dept. Biol., W. Va. Univ., Morgantown, W. Va.	1930
BROOMAN, RONALD CHARLES, c/o Bank of Montreal, Waterloo, Ont., Can.	1931
BROOMHALL, WILLARD HARLAN, Stockport, Ohio	1929
BROUN, MAURICE, c/o Miss Bessie Penniman, Orleans, Cape Cod, Mass.	1922
BROWN, DR. ALICE LENORE, P. O. Box 1311, Washington, D. C.	1935
BROWN, MISS BERTHA LOUISE, 53 Court St., Bangor, Maine	1918
BROWN, FRANK REID, 1602 Walker Ave., Greensboro, N. C.	1930
BROWN, HARRY APPLETON, 40 Talbot St., Lowell, Mass.	1912
BROWN, HUBERT HARTFIELD, 42 Pacific Ave., Toronto 9, Ont., Can.	1924
BROWN, JOHN WILLCOX, White Oaks, Montchanin, Del.	1932

BROWN, MISS LILLA MAUD, 76 Charles St., Auburndale, Mass.	1931
BROWN, RALPH MINTHORNE, Librarian V. P. I. Library, Blacksburg, Va.	1933
BROWN, WILLIAM JAMES, Apt. 14, 4129 Dorchester St., West, Westmount, Que., Can.	1908
BROWN, WILLIAM LEWIS, U. S. Nat. Mus., Washington, D. C.	1927
BROWN, WILMOT WOOD, Hotel Mexico, Chilpancingo, Guerrero, Mexico	1929
BROWNING, WILLIAM HALL, 103 Park Ave., New York, N. Y.	1911
BRUEN, FRANK, 22 High St., Bristol, Conn.	1908
BRUESTLE, BERTRAM GEORGE, 394 Whitney Ave., New Haven, Conn.	1929
BRUMBAUGH, CHALMERS SHERFEEY, 2606 Elsinor Ave., Baltimore, Md.	1916
BRUNER, STEPHEN COLE, Estacion Agronomica, Santiago de las Vegas, Habana, Cuba	1926
*BRUUN, CHARLES ANAULTUS, 1510 Central Ave., Hot Springs, Ark.	1919
BRYAN, MRS. ALFRED HENRY, Box 1495, Ancon, Canal Zone	1927
BRYANT, LINCOLN, JR., 149 Randolph Ave., Milton, Mass.	1927
BRYANT, WILLIAM LETCHWORTH, Park Museum, Providence, R. I.	1926
BRYENS, OSCAR MCKINLEY, R. F. D. No. 1, McMillan, Luce Co., Mich.	1924
BUCHHEISTER, CARL W., Secy. Mass. Audubon Soc., 66 Newbury St., Boston, Mass.	1936
BUCKALEW, HERBERT, 611 East 2d St., Milford, Del.	1936
BUCKLE, JOHN WILLIAM, c/o Thomas Robertson & Co., P. O. Box 2460, Mon- treal, Can.	1928
BUJAK, B. J., Dept. Conservation, Mich. State Coll., East Lansing, Mich.	1936
BULKELEY, MORGAN GARDNER, 3D, 96 Woodland St., Hartford, Conn.	1935
BULL, D. BERNARD, 4522 Brookline St., Seattle, Wash.	1933
BULLOCK, DILLMAN SAMUEL, Casilla 2D, Angol, Chile	1920
BUMP, GARDINER, Conservation Dept., Albany, N. Y.	1933
BUNDICK, MISS HARRIET ELLEN, 1465 Columbia Road, N. W., Washington, D. C.	1924
BURGESS, MRS. CALVIN LAFAYETTE, 1900 Memorial Ave., Lynchburg, Va.	1930
BURGESS, JOHN KINGSBURY, West St., Dedham, Mass.	1898
BURGESS, THORNTON WALDO, 61 Washington Road, Springfield, Mass.	1919
BURNHAM, STEWART HENRY, Dept. Botany, Cornell Univ., Ithaca, N. Y.	1919
BURROWES, RICHARD BERESFORD, Sycamore House, Lydd, Kent, Eng.	1931
BURT, DR. WILLIAM HENRY, Mus. Zoöl., Univ. Michigan, Ann Arbor, Mich.	1925
BURTON, EDWARD MILBY, 18 Atlantic St., Charleston, S. C.	1929
BUSH, LEE, Cambria, Ill.	1934
BUTLER, ARTHUR LENNOX, St. Leonard's Park, Horsham, Sussex, England	1928
BUTTS, WILBUR KINGSLEY, 434 Barton St., Chattanooga, Tenn.	1927
CADWALADER, CHARLES MEIGS BIDDLE, Acad. Nat. Sci., Philadelphia, Pa.	1924
CAHALANE, VICTOR HARRISON, Wildlife Div., Nat. Park Service, Washington, D. C.	1934
CAHN, DR. ALVIN ROBERT, 610 Arnstein Bldg., Knoxville, Tenn.	1917
CAIRNS, DR. ALEXANDER, 209 Ampere Pkway., Bloomfield, N. J.	1928
CAIRNS, JOHN MACKAY, 333 Wheeler Ave., Scranton, Pa.	1926
CALDER, JAMES ALEXANDER, Rt. 1, Buena Park, Orange Co., Calif.	1926
CALHOUN, MISS EMMA MAY, 262 Commonwealth Ave., Boston, Mass.	1921
CALHOUN, JOHN B., c/o U. S. Hayes, Cabell Ave., University, Va.	1936
CALLENDER, JAMES PHILLIPS, 32 Broadway, New York, N. Y.	1903
CALVERT, EARL WELLINGTON, Halliburton P. O., Ont., Can.	1936

CAMERON, LINDSAY DUNCAN, Hilly St., Mortlake, N. S. W., Australia	1929
CAMP, CARA LOUIS, 635 N. Irving Ave., Scranton, Pa.	1926
CAMPBELL, DR. JAMES ARCHIBALD, 13 Elm St., Toronto, Ont., Can.	1927
CAMPBELL, JOHN SHERMAN, Bienville, La.	1932
CAMPBELL, LOUIS WALTER, 304 Fearing Blvd., Toledo, Ohio.	1929
CAMPBELL, MISS MILDRED F., 29 No. Hawthorne Lane, Indianapolis, Ind.	1936
CANNON, AUGUSTUS BARTOW, Laccochee, Pasco Co., Fla.	1930
CANTWELL, GEORGE GORDON, Mus. Hist., Art. & Sci., Exposition Park, Los Angeles, Calif.	1929
CARDIFF, IRA D., 709 North First Ave., Yakima, Wash.	1935
CARLETON, GEOFFREY, 52 W. 94th St., New York, N. Y.	1933
CARLISLE, GEORGE LISTER, JR., Norfolk, Conn.	1920
CARLSON, T. O., Room 907, 1 Park Ave., New York, N. Y.	1934
CARMICHAEL, WILLIAM HALL, Carstairs, Alberta, Can.	1931
**CARPENTER, REV. CHARLES KNAPP, 10920 S. Boyne Ave., Chicago, Ill.	1894
CARPENTER, DR. CLARENCE RAY, Bard College, Annandale-on-Hudson, N. Y.	1934
CARR, WILLIAM HENRY, Dept. Education, Am. Mus. Nat. Hist., New York, N. Y.	1932
CARRIGER, HENRY WARD, 5185 Trask St., Oakland, Calif.	1913
*CARROLL, JAMES JUDSON, P. O. Box 356, Houston, Texas.	1926
CARROLL, PROF. ROBERT PATRICK, 213 Maiden Lane, Lexington, Va.	1932
CARSON, HAMPTON LAWRENCE, JR., 636 Winsford Road, Bryn Mawr, Pa.	1935
CARTER, JOHN DARLINGTON, Lansdowne, Pa.	1907
CARTER, THOMAS DONALD, Am. Mus. Nat. Hist., New York, N. Y.	1921
CARTH, MRS. JEAN ELIZABETH (WYNN URQUHART), Morse Pond Grove, Wellesley, Mass.	1922
CARTWRIGHT, BERTRAM WILLIAM, 238 Guildford St., Deer Lodge, Winnipeg, Man., Can.	1924
CARTWRIGHT, WILLIAM JAMES, Williamstown, Mass.	1920
CASSEL, FRANK, Wheaton College, Wheaton, Ill.	1935
CAYONETTE, RAYMOND, 87 Wolfe St., Lewis, Que., Can.	1936
CECCARELLI, FRANK EDWARD, 247 Hunter Ave., Philipse Manor, N. Y.	1934
CHALIF, EDWARD LOUIS, Barnsdale Road, Short Hills, N. J.	1935
CHAMBERLAIN, EDWARD BURNHAM, Charleston Mus., Charleston, S. C.	1923
CHAMBERLAIN, GLEN DAVID, 22 Academy St., Presque Isle, Maine.	1929
*CHAPIN, MISS ANGIE CLARA, c/o First National Bank & Trust Co., Ann Arbor, Mich.	1896
CHAPMAN, CLARENCE EDWARD, Oakland, N. J.	1924
CHAPMAN, FLOYD BARTON, 1944 Denune Ave., Columbus, Ohio.	1936
CHAPMAN, MRS. FRANK MICHLE, 1158 Fifth Ave., New York, N. Y.	1908
CHAPMAN, LAWRENCE BOYLSTON, 8 Ingraham Rd., Wellesley, Mass.	1930
CHASE, DR. WARREN WILLIAM, Conservation Service, 307 Fleming Bldg., Des Moines, Iowa.	1934
CHEESMAN, WILLIAM HANNOLD, Biological Survey, Washington, D. C.	1920
CHENEY, REV. ROBERT FRANCIS, St. Mark's Rectory, Southborough, Mass.	1922
CHILDS, EDWARD CHILDERFOLK, P. O. Box 774, Reading, Pa.	1930
CHIN, WESLEY, 108 Mechanic St., Worcester, Mass.	1934
CHRISTOFFERSON, DR. KARL, Blaney, Schoolcraft Co., Mich.	1921
*CHURCH, MISS CYNTHIA, The Point, Great Neck, L. I., N. Y.	1926
CHURCHILL, ETHAN DICK, 2006 Ravenna Blvd., Seattle, Wash.	1932

CLABAUGH, ERNEST DWIGHT, 44 Lenox Road, Berkeley, Calif.....	1924
CLARK, AUSTIN HOBART, 1818 Wyoming Ave., Washington, D. C.....	1919
CLARK, MISS EDITH (DELIA) MAY, 350 Maine St., Glastonbury, Conn.....	1929
CLARK, GEORGE CLIFFORD, 295 Manor Road, Rockcliffe Park, Ottawa, Ont., Can.....	1935
CLARK, GEORGE ROBERTS, Cynwyd, Pa.....	1926
CLARK, HAROLD WILLARD, Angwin, Napa Co., Calif.....	1931
CLARKE, CHARLES EVERETT, 51 Summit Road, Medford, Mass.....	1907
CLARKE, CHARLES HENRY DOUGLAS, Dept. Zoöl., University of Toronto, Toronto, Ont., Can.....	1931
CLATTENBURG, ALBERT EDWIN, JR., Amer. Consulate General, Batavia, Java, Dutch East Indies.....	1929
CLAUSEN, ROBERT THEODORE, Dept. Botany, Cornell Univ., Ithaca, N. Y.....	1928
*CLEAVES, HOWARD HENDERSON, 8 Maretzek Court, Prince Bay, Staten Id., N. Y.....	1907
CLEBSCH, ALFRED, R. F. D. 1, Clarksville, Tenn.....	1934
CLEEVE, WILLIAM KINGDON, School of Arts, Bolsover St., Rockhampton, Queensland, Australia.....	1929
CLEMENT, ROLAND CHARLES, 152 Tremont St., Fall River, Mass.....	1935
CLEVELAND, LLEWELLYN WILLIAM, West Chop Rd., Vineyard Haven, Mass.....	1932
CLOW, MISS MARION, P. O. Box 163, Lake Forest, Ill.....	1929
COBB, DR. CLEMENT BIDDLE PENROSE, 1261 Madison Ave., New York, N. Y.....	1933
COBB, DR. STANLEY, 334 Adams St., Milton, Mass.....	1909
COBLE, AULDEN DELBERT, 6047 N. Neva Ave., Norwood Park, Chicago, Ill.....	1934
COES, H. VINTON, JR., 18 Braemore Road, Upper Montclair, N. J.....	1933
COFFEY, BEN BARRY, JR., 1434 Bank of Commerce Bldg., Memphis, Tenn.....	1929
COFFIN, MRS. FRANCIS HOPKINSON, 1528 Jefferson Ave., Scranton, Pa.....	1921
COFFIN, MRS. PERCIVAL BROOKS, 624 So. West A St., Richmond, Ind.....	1905
COGGINS, HERBERT LEONARD, 2929 Piedmont Ave., Berkeley, Calif.....	1913
COKER, COIT MCLEAN, Box 950, Chapel Hill, N. C.....	1930
**COLBURN, ALBERT ERNEST, 510 S. Normandie Ave., Los Angeles, Calif.....	1891
COLEMAN, ROBERT HEMPHILL, 4 Green St., Charleston, S. C.....	1926
COLES, VICTOR, Hampton Institute, Hampton, Va.....	1934
COLLIAS, NICHOLAS ELIAS, 5211 Washington Blvd., Chicago, Ill.....	1932
*COLLINS, HENRY HILL, JR., 1213 St. Matthews Pl., Washington, D. C.....	1923
COLVIN, WALTER, Box 109, Arkansas City, Kansas.....	1932
COMEAU, EMILE, Quebec Zoöl. Gardens, Charlesbourg, Que., Can.....	1935
COMMON, MRS. JAMES ALLISON, 141 Flower Ave. West, Watertown, N. Y.....	1934
COMMONS, MRS. FRANK WATKINS, 608 Chamber of Commerce, Minneapolis, Minn.....	1902
COMPTON, MISS DOROTHY MAY, 22 Wilton St., Princeton, N. J.....	1931
COMPTON, LAWRENCE VERLYN, Box 1511, Soil Conservation Service, Gallup, N. M.....	1926
COMPTON, MISS LEILA ANNA, 846 East Bowman St., Wooster, Ohio.....	1930
CONE, EDWARD TONER, 1030 Summit Ave., Greensboro, N. C.....	1933
CONE, HUTCHINSON INGHAM, 23 Little Hall, Princeton, N. J.....	1933
CONGER, ALLEN CLIFTON, Ohio Wesleyan Univ., Delaware, Ohio.....	1919
CONGREVE, MAJOR WILLIAM MAITLAND, The White House, Llandyrnog, Den- bigh, N. Wales, Gt. Britain.....	1928
CONKEY, JOHN HOUGHTON, 11 Chestnut St., Ware, Mass.....	1929

CONKLIN, MRS. IDA MAUD, 94-36 220 St., Queens Village, N. Y.....	1930
COOK, MISS FANNYE ADDINE, 607 No. State St., Jackson, Miss.....	1924
COOK, GRANT MACDONALD, 2301 Elm St., Youngstown, Ohio.....	1924
COOK, WILLIAM BOLTON, 65 Wesley Ave., Port Chester, N. Y.....	1929
COOKMAN, ALFRED, 438 Baughman Ave., Claremont, Calif.....	1920
COOLIDGE, JOHN TEMPLEMAN, JR., Green St., Readville, Mass.....	1927
COOLIDGE, OLIVER HILL, Broad Brook Road, Bedford Hills, N. Y.....	1928
COOLIDGE, PHILIP TRIPP, 31 Central St., Bangor, Maine.....	1919
*COOMBES, ROBERT ARMITAGE HAMILTON, Sea Bank, Bolton-le-Sands, Carn- forth, Lancashire, England.....	1935
**COPE, FRANCIS REEVE, JR., Dimock, Pa.....	1892
COPE, MISS THEODORA MORRIS, 208 Dearborn Place, Ithaca, N. Y.....	1933
COPELAND, PROF. MANTON, 88 Federal St., Brunswick, Maine.....	1900
CORDIER, DR. ALBERT HAWES, 415 Benton Blvd., Kansas City, Mo.....	1920
CORSEAN, GEORGE HEBDEN, Whittier College, Whittier, Calif.....	1930
CORYELL, SHERMAN, 1500 Hood Ave., Chicago, Ill.....	1921
COSBEY, JAMES, JR., 96 Jewett Parkway, Buffalo, N. Y.....	1934
COUCH, LEO KING, Capital Building, Olympia, Wash.....	1922
COUES, DR. WILLIAM PEARCE, 12 Monmouth Court, Brookline, Mass.....	1920
COURSEN, CHARLES BLAIR, 761 E. 69th Place, Chicago, Ill.....	1928
COURT, EDWARD JOSEPH, 1723 Newton St., N. W., Washington, D. C.....	1927
COVELL, DR. HENRY HALL, 1600 East Ave., Rochester, N. Y.....	1918
COVERDALE, WILLIAM HUGH, 1020 Fifth Ave., New York, N. Y.....	1928
COWELL, MRS. ARTHUR WESTCOTT, College Heights, State College, Pa.....	1934
COX, ARTHUR MALCOLM, 1135 Spruce St., Winnetka, Ill.....	1927
CRAIG, GLENN CLIFTON, 2222 Cole St., Florence, Ala.....	1923
CRAIG, WALLACE, c/o Commercial Bank, 52 Minto St., Edinburgh, Scotland..	1912
CRAM, DR. ELOISE BLAINE, Div. Zool., Public Health Service, Washington, D. C.	1929
CRANDALL, BOWEN SINCLAIR, 213 Raymond St., Chevy Chase, Md.....	1927
CRANE, MISS CLARA LOOMIS, Dalton, Mass.....	1904
*CRANE, CORNELIUS, Ipswich, Mass.....	1930
CRANE, MRS. FRANCIS VALENTINE, South Street, Needham, Mass.....	1931
CRAWFORD, EUGENE E., Sency Migratory Waterfowl Refuge, Germfask, Mich.	1936
CRÉTE, REV. FRÈRE FLORIAN VIATEUR, 7400 Rue St. Laurent, Montreal, Can.	1933
CROCKER, REV. WILLIAM TUFTS, 135 E. 35th St., New York, N. Y.....	1920
CROFT, GORDON YAN, 2115 C St., N. W., Washington, D. C.....	1930
CROMPTON, DAVIS HASTINGS, 74 William St., Worcester, Mass.....	1934
CROOK, COMPTON, Matthew Whaley School, Williamsburg, Va.....	1933
CROSS, ALBERT ASHLEY, Huntington, Mass.....	1918
CROUCH, JAMES ENSIGN, State Teachers College, San Diego, Calif.....	1928
CROWELL, MISS JOANN OLIVIA, Dennis, Mass.....	1918
CROWELL, MRS. PRINCE SEARS, 4 Maple St., Franklin, Mass.....	1930
CROWELL, PRINCE SEARS, JR., Dept. Zool., Miami Univ., Oxford, Ohio.....	1935
CROWELL, MISS SARAH BELLE, Dennis, Mass.....	1924
CRUICKSHANK, ALLAN D., c/o Audubon Association, 1775 Broadway, New York, N. Y.....	1933
CRUMB, J. GLENN, Linesville, Crawford Co., Pa.....	1936
CUMMINGS, DR. CARLOS EMMONS, Buffalo Museum Science, Humboldt Park, Buffalo, N. Y.....	1935
CUMMINGS, MISS EMMA GERTRUDE, 16 Kennard Road, Brookline, Mass.....	1903

CUNNEEN, JAMES MICHAEL, 880 St. John's Place, Brooklyn, N. Y.	1933
CUNNINGHAM, JOSIAS, JR., Fernhill, Belfast, Northern Ireland	1928
**CURRIER, EDMONDE SAMUEL, 8541 N. Chicago Ave., Portland, Ore.	1894
CURRY, DR. HASKELL BROOKS, 228 E. Prospect Ave., State College, Pa.	1930
CURTIS, CHARLES PELHAM, 71 Ames Bldg., Boston, Mass.	1915
CURTIS, MISS ELIZABETH LONG, 5648 Beach Drive, Seattle, Wash.	1934
CURTIS, RICHARD CARY, 30 State St., Boston, Mass.	1935
CURTLER, MARTIN (STUART), c/o Mrs. Geo. P. Cooke, "Kauluwai," Kaunakakai P. O., Molakai, Hawaii	1933
CUTLER, MRS. FREDERICK MORSE, 103 Butterfield Terrace, Amherst, Mass.	1923
CUTTER, MISS LUCIA BELLE, Jaffrey, N. H.	1920
CUTTER, VICTOR MACOMBER, JR., New London, N. H.	1936
DALEY, MRS. EDWIN WOOD, Oliveria, Ulster Co., N. Y.	1925
DALEY, MISS MARY WOOD, Darling P. O., Delaware Co., Pa.	1920
DAMON, DAVID, 724 6th St., Ames, Iowa	1934
DANIELSON, KARL AUGUSTUS, Litchfield, Minn.	1928
DANISCH, JOHN ALBERT, 933 So. Wisconsin Ave., Oak Park, Ill.	1934
DARBY, RICHARD T., 5236 Cedar Ave., Philadelphia, Pa.	1936
DARCUS, SOLOMON JOHN, Box 660, Penticton, B. C., Can.	1928
DARLING, JAY NORWOOD, 2320 Terrace Road, Des Moines, Iowa	1934
DARLINGTON, PHILIP JACKSON, JR., Mus. Comp. Zool., Cambridge, Mass.	1923
DARROW, ROBERT WESLEY, Elizabethtown, N. Y.	1928
DAVEY, KENNETH FORSTER, 16 Muskoka Apts., Winnipeg, Man., Can.	1930
DAVIDSON, MRS. GAYLORD, 4735 Dupont Ave., S., Minneapolis, Minn.	1912
DAVIDSON, WILLIAM MARK, Insecticide Testing Lab., Beltsville, Md.	1927
DAVIS, MISS BERTHA EUNICE, 29 Thayer St., Brookline, Mass.	1920
DAVIS, CHARLES EVAN, Ellendale, N. Dak.	1930
DAVIS, DAVID EDWARD, 721 Elmwood Ave., Wilmette, Ill.	1935
DAVIS, EARLE ANDREW, JR., 607 Reed St., Aliquippa, Pa.	1936
DAVIS, MISS EDDIE LEE, 1317 North Main St., Anderson, S. C.	1928
DAVIS, ELI, R. R. 7, London, Ont., Can.	1930
DAVIS, JOHN M., 227 Clark St., Eureka, Calif.	1920
DAVIS, LOUIE IRBY, Director Valley Lab., Box 669, Harlingen, Texas	1935
DAVIS, MALCOLM, 904 11th St., S. E., Washington, D. C.	1930
DAVIS, WILLIAM MORRIS, 535 Interlachen Ave., Winter Park, Fla.	1934
DAY, CHESTER SESSIONS, 45 Englewood Ave., Brookline, Mass.	1897
DEADERICK, DR. WILLIAM HEISKELL, 36 Circle Drive, Hot Springs, Ark.	1931
DEAN, A(BRAM) LAWRENCE, Blacksburg, Va.	1933
DEAN, ROBERT HENRY, 720 Quintard Ave., Anniston, Ala.	1913
DEANE, H(ENRY) TOWNER, 1010 Hubbard Lane, Winnetka, Ill.	1931
DEAR, LT. COL. LIONEL SEXTUS, P. O. Box 127, Port Arthur, Ont., Can.	1928
DEARBORN, SAMUEL STEPHEN, 4 Newport Rd., Cambridge, Mass.	1919
DEBES, VICTOR ALBERT, 1211 Folsom Ave., Prospect Park, Pa.	1929
DECARIE, JULES ALBERT, 4500 Oxford Ave., Montreal, Quebec, Can.	1932
DEGARIS, DR. CHARLES FRANCIS, Dept. Anatomy, Univ. Oklahoma, School of Medicine, Oklahoma City, Okla.	1923
DEIGNAN, HERBERT GIRTON, Chiengmai, Siam	1925
DELANG, THEODORE GEORGE, 1501 Forest Ave., Wilmette, Ill.	1929
DELAFIELD, MRS. JOHN ROSS, 17 E. 79th St., New York, N. Y.	1933
DELANO, RALPH, Presque Isle, Maine	1934

DELAREUELLE, ROBERT R., 1136 East 33d St., Oakland, Calif.....	1936
DELOACH, ROBERT JOHN HENDERSON, 5541 Dorchester St., Chicago, Ill.	1910
DELURY, DR. RALPH EMERSON, Dominion Observatory, Ottawa, Can.....	1920
DEMILLE, JOHN BLAKENEY, 719 Victoria Ave., St. Lambert, Que., Can.....	1922
DENLEY, CHARLES FREDERICK, Rockville, Md.....	1927
DENMEAD, TALBOTT, 2830 St. Paul St., Baltimore, Md.....	1923
DENNY, MISS MARTHA, Dept. Zoöl., Connecticut College, New London, Conn.	1924
DENSMORE, MISS MABEL, 605 East Ave., Red Wing, Minn.....	1910
DENTON, JAMES FRED, 1 Biltmore Apts., Macon, Ga.....	1935
DERBY, DR. RICHARD, Oyster Bay, L. I., N. Y.....	1898
DÉRY, DR. DAVID ALEXIS, 98 St. Joseph St., Quebec, Can..... (1921-1923)	1932
DESMOND, THOMAS CHARLES, 56 Second St., Newburgh, N. Y.....	1929
DETTMANN, WARREN, Milwaukee Public Museum, Milwaukee, Wis.....	1936
DEVITT, OTTO EDMUND, 31 Willowbank Blvd., Toronto 12, Ont., Can.....	1933
DICE, DR. LEE RAYMOND, Zoöl. Mus., Univ. Michigan, Ann Arbor, Mich.	

(1918-27) 1931

DICKENS, MISS ELIZABETH, Block Island, R. I.....	1921
DICKEY, MRS. DONALD RYDER, Calif. Inst. Technology, Pasadena, Calif.	1933
DICKINSON, FRANCIS REYNOLDS, 1518 Astor Street, Chicago, Ill.....	1935
DICKINSON, MISS GRACE IRENE, 12 State St., Worcester, Mass.....	1935
**DILLE, FREDERICK MONROE, P. O. Box 428, Rapid City, S. D.....	1892
DILLEY, WILLARD E., So. Mercer St., Greenville, Pa.....	1936
DINGLE, EDWARD VON SIEBOLD, Huger, S. C.....	1920
DINGMAN, RUSSELL GORDON, York Mills, Toronto, R. R. 2, Ont., Can.....	1926
DISE, MRS. MARY DAMERON, 5 Liberty St., Charleston, S. C.....	1928
DIXON, EDWIN, Box 57, Unionville, Ont., Can.....	1930
DOAK, CHARLES BOONE, 233 Lockhart Hall, Princeton, N. J.....	1930
DOAK, WILLIAM CONWAY, 134 W. Coulter St., Germantown, Philadelphia, Pa.	1927
DOBSON, MISS FRANCES SARAH, 314 N. Avon St., Rockford, Ill.....	1935
DODGE, ERNEST S., Peabody Museum, Salem, Mass.....	1936
DODGE, THOMAS HENRY, Navajo Agency, Ft. Defiance, Ariz.....	1930
DOLEMAN, MISS SUSAN AGNES, 55 Forbes Ave., Northampton, Mass.....	1933
DOLESE, DAVID, 9090 Dwight Ave., Detroit, Mich.....	1933
DOOLITTLE, EDWARD ARTHUR, Box 44, Painesville, Ohio.....	1921
DOREMUS, HENRY MEADE, Towaco, N. J.....	1936
DORSEY, GEORGE ANDREW, 215 E. Hawthorne Ave., College Park, Ga.....	1926
DOUGLASS, DONALD WICKMORE, Dept. Biol., Texas Technological College, Lub-	
bock, Texas.....	1929
DOWNING, STUART CHALMERS, 58 Lappin Ave., Toronto, Ont., Can.....	1935
DREVER, HORACE, 12 W. Mt. Airy Ave., Philadelphia, Pa.....	1928
DREW, MRS. HOWARD ALBERT, 47 Maple Grove, Barre, Vt.....	1934
DRURY, WILLIAM HALLANE, JR., Paradise Rd., Newport, R. I.....	1935
DUBOIS, ALEXANDER DAWES, Christmas Lake Road, Route 2, Excelsior, Minn.	

(1905) 1918

DUBOIS, (H)ENRY (M)ATHUSALEM, Clackamas, Oregon.....	1936
DUBOIS, JOHN SELLERS, 28 Washington Ave., Plainfield, N. J.....	1929
DUDLEY, JACK MURCHIE, 7 Calais Avenue, Calais, Maine.....	1931
DUDLEY, MRS. SARAH HARRIS, Lyman School Branch, Berlin, Mass.....	1924
DUER, HARRY ELDON, 519 Schofield Bldg., Cleveland, Ohio.....	1921
DUESING, MURL, 142 N. 75th St., Milwaukee, Wis.....	1935

DUFF, WILLIAM MCGILL, 144 Ridge Avenue, Ben Avon, Pa.....	1936
DUFOR, MISS LAURA EDNA, 1524 Boyd Ave., Racine, Wis.....	1924
DUMONT, PHILIP ATKINSON, Sand Lake Waterfowl Refuge, Columbia, S. Dak.....	1927
DUNBAR, MISS LULU, Elkhorn, Wis.....	1918
DUNHAM, MRS. FREDERIC GIBBONS, 450 Beverly Road, Ridgewood, N. J.....	1933
DUNKLEBERGER, HARRY WARREN, P. O. Box 6, Flourtown, Montgomery Co., Pa.....	1923
DUNN, JOHN WARNER GRIGG, 1033 Lincoln Ave., St. Paul, Minn.....	1923
DURFEE, MRS. OWEN, 243 Highland Ave., Fall River, Mass.....	1923
DUVALL, ALLEN JOSEPH, Biol. Survey, Dept. Agr., Washington, D. C.....	1935
DYKE, ARTHUR CURTIS, 205 Summer St., Bridgewater, Mass.....	1902
EANES, ROBERT HILL, 1813 24th St., Galveston, Tex.....	1923
EARLE, SAMUEL LOWNDES, 1223 Niazuma Ave., Birmingham, Ala.....	1928
EASTWOOD, SIDNEY KINGMAN, 301 S. Winebiddle Ave., Pittsburgh, 24, Pa.....	1925
EATON, MISS MARY STONE, 8 Monument St., Old Concord, Mass.....	1909
EATON, RICHARD JEFFERSON, 53 State St., Boston, Mass.....	1930
ECKLER, HARLAN EMANUEL, 1757 Hertel Ave., Buffalo, N. Y.....	1935
EDDY, GARRETT, Winthrop House, F 42, Cambridge, Mass.....	1935
*EDSON, JOHN MILTON, Marietta Road, Bellingham, Wash.....	1886
EDSON, WILLIAM LLOYD GARRISON, 54 Fairview Ave., Rochester, N. Y.....	1916
EDWARDS, DAVID KEMP, 494 Lansdowne Road, Rockcliffe, Ottawa, Can.....	1926
EDWARDS, JAMES LELAND, 27 Stanford Place, Montclair, N. J.....	1928
EGGLESTON, JULIUS WOOSTER, Junior College, Riverside, Calif.....	1929
EHEIM, JOSEPH MATHIOUS, 236 Adams St., S., Hutchinson, Minn.....	1927
EHINGER, DR. CLYDE ERNST, 730 Grand Ave., Keokuk, Iowa.....	1904
EIKE, JAMES, Woodbridge P. O., Prince William Co., Va.....	1931
EINARSEN, ARTHUR SKOGMAN, 10 Home Econ. Bldg., Ore. State College, Corvallis, Ore.....	1935
EISENMANN, EUGENE, 11 Broadway, New York, N. Y.....	1936
EKBLAW, DR. WALTER ELMER, Clark University, Worcester, Mass.....	1911
*ELDRIDGE, EVERETT RAYMOND, JR., Chatham, Cape Cod, Mass.....	1928
ELIOT, SAMUEL ATKINS, JR., 32 Paradise Road, Northampton, Mass.....	1936
ELLIOTT, C. FREMONT, 1932 No. 13th St., Philadelphia, Pa.....	1936
ELLIOTT, MRS. JANE SHIELDS, 1867 Kalorama Rd., N.W., Washington, D. C.....	1921
ELLIS, PROF. HAZEL ROSETTA, Keuka College, Keuka Park, N. Y.....	1935
*ELLIS, RALPH, 2420 Ridge Road, Berkeley, Calif.....	1924
ELLISON, REV. CHARLES STUART STANFORD, Hackettstown Rectory, Co. Carlow, Ireland.....	1930
ELROD, MRS. WALTER DEWITT, Box 103, Okmulgee, Okla.....	1924
EMERSON, GUY, 40 West 11th St., New York, N. Y.....	1935
*EMERSON, WILLIAM OTTO, Route 1, Box 39, Hayward, Calif.....	1916
EMERY, FRANK HARDIE, c/o Sandoz Chemical Works Ltd., 179 King St. W., Toronto 2, Ont., Can.....	1928
EMILIO, SHEPARD GILBERT, 7 Winter St., Salem, Mass.....	1922
EMLEN, ARTHUR COPE, "Awbury," Germantown, Philadelphia, Pa.....	1921
EMLEN, JOHN THOMPSON, JR., College of Agriculture, Davis, Calif.....	1925
*EMMET, COL. ROBERT TEMPLE, 550 E. 87th St., New York, N. Y.....	1926
ENGELS, WILLIAM L., Box 31, Notre Dame, Ind.....	1931
ENGLEBY, THOMAS LESTER, 308 Westover Ave., Roanoke, Va.....	1934
ENGLISH, ALMON OWEN, 227 Granby St., Norfolk, Va.....	1928

ERICHSEN, WALTER JEFFERSON, Oxford, Fla.	1919
ERICKSON, ARNOLD B., 2828 32d Ave., S., Minneapolis, Minn.	1936
ERMAN, MISS CELIA, 2431 Pingree St., Detroit, Mich.	1935
ERNSBERGER, MILLARD CLAYTON, 107 Cook St., Ithaca, N. Y.	1934
ERNST, MISS LILLIE ROSE, 6058 Kingsbury Ave., St. Louis, Mo.	1933
ERSKINE, RICHARD, Wenonah, N. J.	1926
ESTEN, SIDNEY RAYMOND, 4112 Graceland Ave., Indianapolis, Ind.	1925
EVANS, CHARLES ALBERT, 701 15th Ave., S. E., Minneapolis, Minn.	1933
EVANS, DR. EVAN MORTON, 550 Park Ave., New York, N. Y.	1916
EYLES, DON EDGAR, 569 N. Highland Ave., N. E., Atlanta, Ga.	1933
EYNON, ALFRED ERNEST, 150 Arnold St., Lonsdale, R. I.	1934
EZRA, ALFRED, Foxwaiter Park, Cobham, Surrey, England	1928
FAGAN, CHARLES LOUIS, Rt. 2, Box 55, Rahway, N. J.	1922
FAIRMAN, MISS MARIAN, 4744 Kenwood Ave., Chicago, Ill.	1920
FALARDEAU, EDWARD ADRIEN, Court of Appeal, Court House, Quebec, Can.	1931
FARGO, WILLIAM GILBERT, 506 Union St., Jackson, Mich.	1923
FARLEY, FRANK LEGRANGE, Box 1, Camrose, Alberta, Can.	1920
FARLEY, JOHN MOYER, JR., Avondale Rd., Gedney Farm Gardens, White Plains, N. Y.	1922
FAUVEL, BERTRAM A., Royal Can. Mounted Police, Ottawa, Ont., Can.	1935
FAY, SAMUEL PRESCOTT, 2 Otis Place, Boston, Mass.	1907
*FEARING, GEORGE RICHMOND, 168 Beacon St., Boston, Mass.	1924
FEENEY, W. S., Nat. Park Service, New Post Office Bldg., Oak Park, Ill.	1936
FEIGHNER, MISS LENA VETA, 298-I So. Tremont St., Kansas City, Kans.	1934
FELKER, JOHN OBERLE, Rt. 1, Box 403, Clayton, Mo.	1933
FELGER, ALVA HOWARD, North High School, Denver, Colo.	1898
FELL, MISS EMMA TREGO, Holicong, Bucks Co., Pa.	1903
FERGUSON, B. W., 715 Hays St., San Antonio, Texas.	1929
FERGUSON, HENRY LEE, 250 Park Ave., New York, N. Y.	1920
*FERGUSON, HOMER LENOIR, Newport News Ship Bldg., Newport News, Va.	1926
FERNEYHOUGH, JOHN BOWIE, 4020 Northrop St., Forest Hill, Richmond, Va.	1930
FERRATT, MRS. ELIZABETH FENTRESS, 2310 Conn. Ave., N. W., Washington, D. C.	1931
FERRIER, MISS JUDITH MADELINE, Hemsby Hall, Hemsby, Norfolk, England	1928
FIELD, MISS CAROLINE LOUISE, 38 Hampton Court, 1461 Mountain St., Montreal, Can.	1928
FIELD, WILLIAM LUSK WEBSTER, Milton Acad., Milton, Mass.	1920
FINFROCK, CHARLES MILLARD, 3186 Oak Road, Cleveland Heights, Ohio	1925
FINSTER, MISS ETHEL B(EULAH), Box 5015, Biltmore Sta., Asheville, N. C.	1930
**FISHER, MISS ELIZABETH WILSON, 2222 Spruce St., Philadelphia, Pa.	1896
FISHER, DR. GEORGE CLYDE, Am. Mus. Nat. His., New York, N. Y.	1908
FISHER, WALTER TAYLOR, 135 So. La Salle St., Chicago, Ill.	(1907-14) 1932
FITZMAURICE, JAMES, 2624 Monroe St., N. E., Washington, D. C.	1932
FLEMING, JAMES MACARTHUR, Drumwalt, The Long Road, Cambridge, England	1928
FLEMING, MRS. THOMAS, JR., 1541 Lombardy Road, Pasadena, Calif.	1935
FLETCHER, LAURENCE BROWN, 112 Pinckney St., Boston, Mass.	1921
FLETCHER, MRS. MARY ELIZABETH, Proctorsville, Vt.	1898
FLICK, MRS. CLAUDE HARRISON, 116 South Brown St., Jackson, Mich.	1933
FLOCK, MRS. JOHN HENRY, 724 17th Ave., Regina, Sask., Can.	1935
FLOOD, MRS. AUBREY CLEVELAND, 409 Stephenson Bldg., Detroit, Mich.	1933

FLOYD, CHARLES BENTON, 454 Wolcott St., Auburndale, Mass.	1916
FLOYD, JOSEPH LARKE, 1009 Geo. D. Harter Bank Bldg., Canton, Ohio	1921
FOLLETT, RICHARD EDWARD, Detroit Club, 712 Cass Ave., Detroit, Mich.	1926
FOOT, DR. NATHAN CHANDLER, 1010 5th Ave., New York, N. Y.	1916
FORBES, JOHN RIPLEY, St. Andrews Rectory, 27 Washington Ave., Stamford, Conn.	1935
FORBES, RALPH EMERSON, 328 Adams St., Milton, Mass.	1917
FORD, FRANCIS, 114 Allyn St., Holyoke, Mass.	1927
FORD, MISS LOUISE PETIGRU, "The Heights," Aiken, S. C.	1919
FORDYCE, MRS. DELABARRE, Greenbush, Mass.	1935
FORTIN, JAMES M., 8538 St. Louis Ave., Evanston, Ill.	1934
FORTNER, PROF. HARRY CADWALLADER, 102 Bidwell Ter., Rochester, N. Y.	1929
FOSTER, MISS CAROLINE ROSE, Mendham Road, Morristown, N. J.	1928
*FOSTER, FRANCIS APTHORP, Edgartown, Mass.	1918
*FOSTER, FRANK BRISBIN, Broadwater Farm, Phoenixville, Pa.	1916
FOSTER, GEORGE W., JR., 15 West Circle Drive, Norris, Tenn.	1936
*FOSTER, JOHN HAWLEY, P. O. Box H, Haverford, Pa.	1927
FOSTER, MAXWELL EVARTS, South Hamilton, Mass.	1932
FOULKES-ROBERTS, CAPT. PETER ROBERTS, Westwood, Goring-on-Thames, England	1935
**FOWLER, FREDERICK HALL, 221 Kingsley Ave., Palo Alto, Calif.	1892
FOWLER, HENRY WEED, Acad. Nat. Sciences, Philadelphia, Pa.	1898
FOX, ADRIAN CASPAR, Soil Conservation Service, Box 367, Park River, N. Dak.	1935
FOX, MISS JENNIE ETHEL, Sparkill, Rockland Co., N. Y.	1925
FRANZEN, ALBERT JOHN, Field Museum Natural History, Chicago, Ill.	1934
FRAZAR, MRS. MARSTON ABBOTT, 84 Abbottsford Road, Brookline, Mass.	1925
FRAZIER, JOSEPH FRANKLIN, 724 Proctor Place, Independence, Mo.	1928
FREE, GEORGE JAMISON, 626 Sunset Road, State College, Pa.	1935
FREER, RUSKIN SKIDMORE, Lynchburg College, Lynchburg, Va.	1928
FRENCH, MRS. ALFRED JASON, R. F. D. 1, Box 40, Carlton, Ore.	1921
FRENCH, MRS. MENA VESTAL, Box 171, Wayland, Mass.	1923
*FREY, MRS. EDITH KRIEGER, 814 3d St., Jackson, Mich.	1923
FRICKE, REINHOLD LEO, Carnegie Museum, Pittsburgh, Pa.	1927
FRIEDRICH, GEORGE WALTER, 3029 Belmont Ave., Chicago, Ill.	1925
FRIEDMAN, RALPH, 1143 5th Ave., New York, N. Y.	1935
FRISHMAN, KENNETH IRISH, 1114 9th Ave., S., Fargo, N. Dak.	1936
FROST, ALLEN, 143 Academy St., Poughkeepsie, N. Y.	1919
FROST, MRS. CHARLES SUMNER, Deerpath Inn, Lake Forest, Ill.	1936
FRY, MRS. GLADYS GORDON, 66 Eagle Rock Way, Montclair, N. J.	1925
FRY, J. D., 1221 Osborne St., Montreal, Can.	1935
FULLER, ARTHUR BENNETT, Broadmoor Rd., Midland Moor, Mentor, Ohio	1922
FULLER, HENRY CORBIN, 3704 Huntington St., Washington, D. C.	1916
FULLER, HENRY SHEPARD, 3704 Huntington St., Washington, D. C.	1935
FURNISS, OWEN CECIL, 2203 1st Ave., W., Prince Albert, Sask., Can.	1931
GANSON, MISS INA, 248 Oakland Park Ave., Columbus, Ohio	1934
GARDINER, CHARLES BARNES, 175 W. Main St., Norwalk, Ohio	1903
GARDNER, MAJOR LEON LLOYD, 770-11 Scott Ave., Fort Leavenworth, Kan.	1924
GARDNER, MRS. WALTER HINCKLEY, Bucksport, Maine	1920
GARRETT, MRS. HARRY LEE, 1523 31st St., Galveston, Texas	1929
GATES, FRANK WARD RISDON, 33 Zion St., Hartford, Conn.	1928

*GAUNTLETT, FREDERICK JOHN, 16 Primrose St., Chevy Chase, Md.	1925
GEDDES, JOHN MACLAY, 331 High St., Williamsport, Pa.	1924
GEIST, DR. ROBERT MILLER, Dept. Biology, Capitol University, Columbus, O.	1923
GERMAN, MISS ANN, East Islip, L. I., New York	1935
GIANINI, CHARLES ALFRED, Poland, N. Y.	1911
GIFFORD, PAUL COFFIN, 73 Whittier Ave., Olneyville, R. I.	1921
GIGNOUX, CLAUDE, 73 Tunnel Road, Berkeley, Calif.	1921
GILBERT, MRS. FREDERICK MILLEMON, Walpole, N. H.	1919
GILES, NORMAN HENRY, JR., 959 Drewry St., N. E., Atlanta, Ga.	1930
GILLESPIE, JOHN ARTHUR, 313 Sharp Ave., Glenolden, Pa.	1923
GILLESPIE, MRS. JOHN ARTHUR, 313 Sharp Ave., Glenolden, Pa.	1924
GILLIN, JAMES RHODES, Ambler, Pa.	1921
GILLIS, FRANK, 508 Park St., Aroka, Minn.	1922
GILMORE, MRS. ALBERT ESTES, 2215 E. Admiral Bldg., Tulsa, Okla.	1927
GILMORE, ALBERT FIELD, 84 Garfield St., Watertown, Mass.	1924
GLADDING, MRS. JOHN RUSSELL, Thompson, Conn.	1912
GLEASON, MRS. CLARK HOUGH, Berrywood Wilds, Ada, Mich.	1917
GLENN, DONALD, Box 9, Franklin, Pa.	1923
GLOVER, PERCY HAMPTON, Broadlands, Fareham, Hampshire, Eng.	1931
GLOYD, HOWARD KAY, Dept. Zool., Univ. Michigan, Ann Arbor, Mich.	1920
GODFREY, W(ILLIAM) EARL, Box 252, Wolfville, Nova Scotia, Can.	1931
GOELITZ, WALTER ADOLPH, 240 Little Neck Road, Douglaston, L. I., N. Y.	1916
GOELLNER, REV. EUGENE, St. Anselm's College, Manchester, N. H.	1928
GOETZ, CHRISTIAN JOHN, 3503 Middleton Ave., Cincinnati, Ohio	1929
GOLDSMITH, GLENN WARREN, Box 1611, University Station, Austin, Texas	1926
GOOD, NEWELL EMANUEL, Bur. Entomology, Washington, D. C.	1927
GOODRICH, MISS JULIET THEODOSIA, Land o' Lakes, Vilas County, Wis.	1904
GORDON, HARRY EDGAR, 307 Laburnum Crescent, Rochester, N. Y.	1911
GORDON, HUNTLY KAY, 16 Cortland Ave., Toronto 12, Ont., Can.	1933
GORDON, KENNETH LLEWELLYN, Dept. Zool., State Agric. Coll., Corvallis, Oregon	1924
GORDON, SETH EDWIN, 2001 Market St., Harrisburg, Pa.	1924
GORMLEY, A(LPHONSUS) LIGUORI, 79 John St., N., Arnprior, Ont., Can.	1918
GOSLIN, CHARLES R., 407 Washington Ave., Lancaster, Ohio	1936
GORSKI, ARTHUR JACOB, Ephraim, Wis.	1933
GOULD, MRS. J. AVERY, 38 Phillips St., Andover, Mass.	1930
**GOULD, JOSEPH EDWARD, 1920 Springfield Ave., Campostella Heights, Nor- folk, Va.	1889
GRADY, MISS MARY LOUISE, c/o Joliet Township High School, Joliet, Ill.	1936
GRAFF, MISS AUDRE, 929 Yale Ave., Fresno, Calif.	1935
GRANGE, WALLACE BYRON, Fish Creek, Door Co., Wis.	1920
**GRANGER, WALTER WILLIS, Amer. Mus. Nat. Hist., New York, N. Y.	1891
GRANQUIST, HARRY, 1802 Pennsylvania Ave. E., Warren, Pa.	1928
GRANT, CLEVELAND PUTNAM, 620 Greenup St., Covington, Ky.	1924
GRANT, WILLIAM WRIGHT, 816 S. Main St., Geneva, N. Y.	1910
GRABETT, FRANK GODWIN, 535 Green Bay Road, Glencoe, Ill.	1923
GRASS, ARTHUR MERRITT, 339 B St., N.E., Linton, Ind.	1935
GRAY, ALWYN EVERETT, 1016½ N.W. 20th St., Oklahoma City, Okla.	1923
GRAY, GEORGE WASHINGTON, Greenvale Farm, Poughkeepsie, N. Y.	1920
GREELEY, FREDERICK, 200 Chestnut St., Winnetka, Ill.	1936

GREELEY, JOHN RICHARD, 1320 North Univ. Ave., Ann Arbor, Mich.....	1925
GREEN, MRS. R. W., 2818 White Oak Road, Raleigh, N. C.....	1933
*GREEN, MORRIS MILLER, 39 Wyoming Ave., Ardmore, Pa.....	1921
GREENE, EARL ROSENBURY, New Holland, N. C.....	1921
GREENE, MISS MARGERY, 2199 Holland Ave., New York, N. Y.....	1933
GREENFIELD, RAY HERBERT, 124 Maple Ave., Takoma Park, Md.....	1929
GREENOUGH, HENRY VOSE, 39 Worthington Road, Brookline, Mass.....	1901
GREENWALT, ERNEST JAGGER, Wichita Mts. Wildlife Refuge, Cache, Okla....	1932
GREENWELL, GUY AYTCH, 900 East 7th St., Joplin, Mo.....	1928
GREENWOOD, CHRISTOPHER, Rt. 1, Lausana, Alberta, Can.....	1926
GREGORY, REV. CAREY ELLIS, Box 763, Morganton, N. C.....	1922
GREGORY, TAPPAN, 19 So. LaSalle St., Chicago, Ill.....	1931
GRIFFIN, DONALD R., M 31 Lowell House, Harvard Univ., Cambridge, Mass.	1936
GRIFFITH, MISS MARY CLARK, 119 Dean St., West Chester, Pa.....	1930
GRIMES, SAMUEL ANDREW, 4661 Attleboro St., Jacksonville, Fla.....	1925
GRINNELL, ELMER NATHAN, 1613 30th St., N. W., Washington, D. C.....	1932
GRINNELL, MRS. JOSEPH, 2737 Forest Ave., Berkeley, Calif.....	1931
GRISWOLD, JOHN AUGUSTUS, JR., Mus. Comp. Zoöl., Cambridge, Mass.....	1933
GROFF, MISS FRANCES LLOYD, 19 West Union St., West Chester, Pa.....	1929
GROGAN, MISS MARY A., 3317 Westerwald Ave., Baltimore, Md.....	1936
GROMME, OWEN JUSTUS, Public Museum, Milwaukee, Wis.....	1924
GROSKIN, HORACE, 220 St. Georges Road, Ardmore, Pa.....	1935
GROSS, WILLIAM ALBERTO, 11 Boody St., Brunswick, Maine.....	1932
GRUDE, INGEBRET, Victor, Teller Co., Colo.....	1929
*GUENSEY, RAYMOND GANO, Eden Terrace, Poughkeepsie, N. Y.....	1928
*GUILD, EASTHAM, Box 56, Papeete, Tahiti.....	1930
GUION, GEORGE SETH, 1701 American Bank Bldg., New Orleans, La.....	1934
GUNN, WILLIAM WALKER HAMILTON, 6 Dunloe Road, Toronto, Ont., Can....	1935
GUNTHER, DR. HORACE, University Sta., Tucson, Ariz.....	1919
GUTHRIE, DR. DONALD, Robert Packer Hospital, Sayre, Pa.....	1930
HADELER, EDWARD WILLIAM, 336 S. State St., Painesville, Ohio.....	1920
HADLEY, ALDEN HERVEY, Nat. Assn. Audubon Societies, 1775 Broadway, New York, N. Y.....	1906
HADLEY, ALDEN HERVEY, 146 Florida Court, Gainesville, Fla.....	1906
HAGAR, J. A., Marshfield Hills, Mass.....	1935
HAGNER, DR. FRANCIS RANDALL, 1824 19th St., N. W., Washington, D. C....	1926
HAGUE, MISS FLORENCE, Sweet Briar College, Sweet Briar, Va.....	1930
HAHN, WILLIAM, JR., Route 5, Greenwood, S. C.....	1925
HAILE, HENRY PENNINGTON, Hanover, N. H.....	1919
HAINES, ROBERT LEE, 126 Maple Terrace, Merchantville, N. J.....	1924
HALDEMAN, MISS DORIS WEISS, E. Mt. Airy Ave., Philadelphia, Pa.....	1927
HALE, ARTHUR THOMAS, JR., P. O. Box 753, Mission, Texas.....	1934
HALE, EZRA A., 218 Edgerton St., Rochester, N. Y.....	1927
HALE, WILLIAM BARTON, Aqueduct Bldg., Rochester, N. Y.....	1928
HALL, WATSON, U. S. Soil Conservation Service, Coon Valley, Wis.....	1934
HALLE, LOUIS JOSEPH, JR., R. D. 1, New Canaan, Conn.....	1934
HALLMAN, ROY CLINE, P. O. Box 826, Panama City, Fla.....	1928
HALPIN, ROBERT BLAKE, 2237 Eton Ridge, Madison, Wis.....	1934
HALVERSON, DR. HAROLD MARTIN, 312 Pearl St., Yankton, S. Dak.....	1924
HAMBLETON, JAMES CHASE, 380 W. 8th Ave., Columbus, Ohio.....	1935

HAMILL, MRS. LAFAYETTE C., 477 Grove St., Worcester, Mass.	1924
HAMILTON, ARTHUR LINCOLN, 836 North Raymond Ave., Pasadena, Calif.	1929
HAMILTON, DR. WILLIAM JOHN, JR., Dept. Zoöl., McGraw Hall, Cornell Univ., Ithaca, N. Y.	1924
HAMMOND, DR. ROLAND, 41 Boylston Ave., Providence, R. I.	1924
HAMPE, IRVING EDWARD, 2527 W. North Ave., Baltimore, Md.	1933
HAND, RALPH LEVI, 428 11th St., St. Maries, Idaho.	1929
HANDLAN, JAMES TEE, JR., 91 Lynwood Ave., Wheeling, W. Va.	1934
HANDLAN, JOHN WELTY, Oglebay Institute, Oglebay Park, Wheeling, W. Va.	1933
HANDLEY, CHARLES OVERTON, Blacksburg, Va.	1916
HANDEAKER, RALPH, Colo, Iowa	1922
HANN, DR. HARRY WILBUR, Zoöl. Dept., Univ. Mich., Ann Arbor, Mich.	1930
HANNA, DR. G. DALLAS, Calif. Acad. Sci., San Francisco, Calif.	1930
HANNA, RALPH ADOLPH, 2043 Mohawk St., Chicago, Ill.	1931
HANNA, WILSON CREAL, 141 East F St., Colton, Calif.	1919
HAPP, GEORGE BIPPUS, 5539 Page Ave., St. Louis, Mo.	1933
HARDING, MRS. RICHARD BRUCE, 121 University Road, Brookline, Mass.	1922
HARGRAVE, LYNDON LANE, Museum Northern Arizona, Box 203, Flagstaff, Ariz.	1931
HARING, MRS. INEZ MARIA, Woodland, Ulster Co., N. Y.	1921
HARKIN, HON. JAMES BERNARD, Commr. Canadian Nat. Parks, Ottawa, Can.	1921
HARLEE, CAPT. HARRY LEE, 900 S. Irby St., Florence, S. C.	1932
HARRINGTON, DR. PAUL, 813 Bathurst St., Toronto, Ont., Can.	1922
HARRIOT, SAMUEL CARMAN, 200 West 58th St., New York, N. Y.	1934
HARRIS, ALAN C., Griswolden, 60 Dreilinden Str., Lucerne, Switzerland	1934
HARRIS, ARTHUR LESLIE, Ultimo House, Kangaloon Rd., Bowtall, N. S. W., Australia.	1929
HARRIS, DR. ARTHUR TREVENNING, 504 Broadway, Gary, Ind.	1935
HARRIS, MRS. HUGH H., Emory University, Ga.	1934
HARRIS, LUCIEN, JR., c/o The Macmillan Co., 500 Spring St., N. W., Atlanta, Ga.	1930
HARRIS, ROBERT DOUGLAS, Vermont Cottage, La Haule, St. Brelade, Jersey, Channel Ids.	1929
HARRIS, WILLIAM GEORGE FOWLE, 13 Richmond St., Dorchester, Mass.	1933
HARRIS, MRS. WILLIAM GRAY, 10 Harvard St., Worcester, Mass.	1933
*HARRIS, WILLIAM PICKETT, 15410 Windmill Point Drive, Grosse Pointe Parks, Mich.	1925
HARRISON, ED NEWTON, Box 324, Encinitas, San Diego Co., Calif.	1934
*HARRISON, GEORGE LEIB, JR., 1520 Locust St., Philadelphia, Pa.	1919
HARROWER, DR. DAVID ELSON, 1032 W. Broadway, Woodmere, L. I., N. Y.	1933
HART, CECIL, 132 N. 3d St., Montebello, Los Angeles Co., Calif.	1921
HART, WILLIAM STEPHEN, Box 1185, Montreal, Que., Can.	1926
HARTER, SAMUEL GEORGE, Nat. Hist. Museum, Balboa Park, San Diego, Calif.	1926
HARTZ, MISS BETTY, The Plymouth, 1236 11th St., N.W., Washington, D. C.	1936
HARVEY, JOHN LEGRAND, Mercantile Bldg., Waltham, Mass.	1916
HARVEY, ROGER DOUGLAS, 304 Allegany Ave., Coudersport, Pa.	1927
HARWELL, CHARLES ALBERT, Yosemite National Park, Calif.	1929
HASBROUCK, HENRY CRANE, 88 Douglas Rd., Glen Ridge, N. J.	1920
*HASKELL, MISS SADIA, 3828 30th St., Mt. Rainier, Md.	1916
HASTINGS, WALTER ERNEST, Box 181, Howell, Mich.	1921
HATHAWAY, ALTON HASTINGS, 25 Oakland St., Lexington, Mass.	1921
HATHAWAY, MRS. EMILY LOUISE, Spring St., Rt. 1, W. Bridgewater, Mass.	1920

HATHAWAY, HARRY SEDGWICK, corner of Riverside and Thorn Aves., South Auburn, Cranston, R. I.	1897
HAULTAIN, CHARLES FREDERICK, Port Hope, Ont., Can.	1923
HAUSMAN, DR. L(EON) A(UGUSTUS), Dept. Zoöl., N. J. College for Women, New Brunswick, N. J.	1936
HAUTHAWAY, CLARENCE LITTLE, 638 Summer St., Lynn, Mass.	1927
**HAVEMEYER, HENRY OSBORNE, Mahwah, N. J.	1893
HAVEMEYER, HENRY OSBORNE, JR., Mahwah, N. J.	1919
HAVEN, HERBERT MAURICE WEST, 500 Forrest Ave., Portland, Maine	1920
HAVERSCHMIDT, FRANCOIS, 119 Kleverparkweg, Haarlem, Holland	1928
HAYES, MRS. EDWIN AUGUSTUS, 466 Elm St., New Haven, Conn.	1927
HEBARD, FREDERICK VANUXEM, 8001 Navahoe St., Chestnut Hill, Philadelphia, Pa.	1930
HECK, DR. EDSON BURR, 117 West 11th St., New York, N. Y.	1936
HEGGENESS, H. GORDON, 1111 8th St., N. Fargo, N. Dak.	1935
HEGNER, FRANCIS ARNOLD, 513 Hill St., Sewickley, Pa.	1924
HEILNER, VAN CAMPEN, Spring Lake Beach, N. J.	1925
HELPER, MISS LOUISE, 111 Ninth St., Watkins Glen, N. Y.	1929
*HELME, ARTHUR HUDSON, 223 Bayview Terrace, Port Jefferson, N. Y.	1888
HELMUTH, DR. WILLIAM TOD, 3d, 667 Madison Ave., New York, N. Y.	1923
HEMPHILL, FREDERICK ARNOLD, 128 Broad St., Elizabeth, N. J.	1929
HENDERSON, ARCHIBALD DOUGLAS, Belvedere, Alberta, Can.	1924
HENDERSON, WALTER CLEAVELAND, 8 Magnolia Parkway, Chevy Chase, Md.	1917
HENDRICKS, GEORGE BARTLETT, 115 Wendell Ave., Pittsfield, Mass.	1935
HENNESSY, THOMAS SARSFIELD, 19 Loretta St., Ottawa, Ont., Can.	1930
HENRY, CORDIA JOHN, Box 37, Upham, N. D.	1934
HENSHAW, SAMUEL, 28 Fayerweather St., Cambridge, Mass.	1924
HERBST, MRS. THEODORE WILHELM, Faircourt, Bernardsville, N. J.	1931
HERING, PAUL E., Oglethorpe University, Ga.	1934
HERMAN, CARLETON MARTIN, Johns Hopkins Univ., School of Hygiene, 615 N. Wolfe St., Baltimore, Md.	1936
HERMAN, DR. WILLIAM CEPHAS, 19 West 7th St., Cincinnati, Ohio	1921
HERRICK, MISS ELEANOR ELIZABETH, 935 Smith Lane, Woodmere, L. I., N. Y.	1933
HEYDWEILLER, MISS MARY K., Fernow Hall, Cornell Univ., Ithaca, N. Y.	1936
HIATT, BENJAMIN CHAPMAN, 215 N. Lansdowne Ave., Lansdowne, Pa. (1925-29)	1936
HIBBARD, CLAUDE WILLIAM, Mus. Vert. Paleont., Univ. Kansas, Lawrence, Kan.	1934
HIBBERT, MRS. HAROLD, 17 Parkside Place, Côte de Neiges Road, Montreal, Que., Can.	1926
HICKEY, JOSEPH JAMES, 2952 Marion Ave., New York, N. Y.	1936
*HIGHAM, WALTER ERNEST, The Oaks, Clayton-le-Dale, near Blackburn, England	1928
HILDRETH, MISS ELLEN ELIZABETH, 126 Coolidge Hill, Cambridge, Mass.	1922
HILL, FREDERICK WILLIAM, 690 Bluff St., Glencoe, Ill.	1933
HILL, JULIAN WERNER, 707 Coverdale Road, Wilmington, Delaware	1934
HILL, MRS. THOMAS ROBY, 4011 Baltimore Ave., Philadelphia, Pa.	1903
HILLER, MISS ANNABELLE, 19 Barker St., Jamestown, N. Y.	1936
HINCHMAN, RICHARD MAY, 1894 Beacon St., Brookline, Mass.	1930
HINCKLEY, GEORGE LYMAN, 113 Touro St., Newport, R. I.	1912
HINDS, FRANK J., Dept. Biology, Western State Teachers College, Kalamazoo, Mich.	1935

HINE, ASHLEY, 8131 Euclid Ave., Chicago, Ill.	1922
HINSHAW, THOMAS DOANE, 1908 Scottwood Ave., Ann Arbor, Mich.	1930
HIX, GEORGE EDWARD, 337 72d St., Brooklyn, N. Y.	1904
HOBSON, MRS. L. G., 1155 Dove Road, Louisville, Ky.	1936
HOECHSTETTER, MRS. S. S., 427 E. St. Johns St., Lake City, Fla.	1933
HOFFMAN, EDWARD CARLTON, 418 Schofield Bldg., Cleveland, Ohio.	1928
HOFFMAN, IRVIN NEWTON, R. F. D. 6, Bethesda, Md.	1924
HOFFMANN, PAUL WILLIAM, 3557 N. 12th St., Milwaukee, Wis.	1924
HOLLAND, HAROLD MAY, Box 515, Galesburg, Ill.	1910
HOLLISTER, GEORGE BUELL, 4 E. 5th St., Corning, N. Y.	1919
HOLMAN, JOHN PAULISON, Fairfield, Conn.	1922
HONYWILL, ALBERT WILLIAM, JR., P. O. Box 288, Detroit, Mich.	1907
HOPE, CLIFFORD ERNEST, Roy. Ontario Mus. Zool., 100 Queen's Park, Toronto, Ont., Can.	1933
HORNBOG, VILJO, Porvoo, Finland.	1932
HORSEY, RICHARD EDGAR, Highland Park, Reservoir Ave., Rochester, N. Y.	1919
HORSFALL, ROBERT BRUCE, 3835 S St., N.W., Washington, D. C.	1905
HOTCHKISS, NEIL, Biol. Survey, Dept. Agr., Washington, D. C.	1935
HOUGHTON, CLARENCE, Hillview, Rennselaer, N. Y.	1920
HOWARD, WILLIAM JOHNSTON, 17391 Roselawn Ave., Detroit, Mich.	1931
HOWATT, DR. GILBERT ANDREW, 1922 F St., Eureka, Calif.	1924
HOWE, DR. CLIFTON DURANT, Faculty of Forestry, Univ. Toronto, Toronto, Ont., Can.	1921
HOWELL, JOSEPH CORWIN, 914 Lucern Terrace, Orlando, Fla.	1928
HOWELL, ROYSTON WYNTER, Queens Chambers, 6 Victoria Parade, Torquay, Devon, England.	1934
HOWELLS, MRS. GERTRUDE W., Pres. Mesilla Valley Aud. Soc., State College, N. M.	1935
HOWLAND, RANDOLPH HUGHBERT, P. O. Box 51, Hudson Terminal, New York, N. Y.	1903
HOYT, JOHN SOUTHGATE YESTON, 206 Washington St., Lexington, Va.	1935
HUBBARD, HUGH WELLS, American Board Mission, Paotingfu, China.	1928
HUBER, MRS. WHARTON, 225 St. Mark's Square, Philadelphia, Pa.	1926
HUDSON, GEORGE ELFORD, 4635 Knox St., Lincoln, Nebr.	1928
HUFF, PROF. NED L., 1219 7th St., S. E., Minneapolis, Minn.	1924
HUGGINS, RUSSELL A., Exp. Zool. Lab., Univ. Ill., Urbana, Ill.	1936
HUGHES, GEORGE THOMAS, Box 153, Plainfield, N. J.	1919
HUGHES, DR. WILLIAM ELLERY, 3945 Chestnut St., Philadelphia, Pa.	1920
HULBURT, MILTON FRANK, Lock Box 502, Reedsburg, Wis.	1934
HULSBURG, EDMUND FRANK, 340 S. Catherine Ave., La Grange, Ill. (1928-31)	1934
HUMPHREY, MRS. HARRY BAKER, Cabin John, Md.	1933
HUMPHREYS, WILLIAM WIRT, 15 Limehouse St., Charleston, S. C.	1932
**HUNN, JOHN TOWNSEND SHARPLESS, 1218 Prospect Ave., Plainfield, N. J.	1895
HUNNEWELL, MISS LOUISA, Washington St., Wellesley, Mass.	1936
HUNT, MISS HELEN CUMMINGS, Washington, Conn.	1928
HUNT, MISS LUCY OLCOTT, 185 Beacon St., Hartford, Conn.	1919
HUNT, ORMOND EDSON, Indian Village Manor, 8120 Jefferson Ave. E., Detroit, Mich.	1933
HURD, MISS FRANCES AMELIA, 119 West Ave., South Norwalk, Conn.	1919
HURLBUT, WILLIAM ELLIS, Vineland, Ont., Can.	1935

HUTCHINSON, GEORGE ROWLAND, P. O. Box 770, Auckland, New Zealand	1930
HUTT, DR. FREDERICK BRUCE, Dept. Poultry Husbandry, Cornell University, Ithaca, N. Y.	1932
*HUYLER, COULTER DUNHAM, 420 Lexington Ave., New York, N. Y.	1928
HUYLER, MRS. COULTER DUNHAM, Greenwich, Conn.	1928
HYDE, ARTHUR SIDNEY, State College of Washington, Pullman, Wash.	1921
HYDE, LATIMER B., 100 Church St., Ware, Mass.	1935
HYSLOP, SAMUEL, 42 Bellevue St., Newton, Mass.	1919
IJAMS, HENRY PEARLE, R. F. D. 9, Knoxville, Tenn.	1922
**INGERSOLL, ALBERT MILLS, 908 F St., San Diego, Calif.	1885
INGRAHAM, EDWARD ANDREWS, 444 Clinton Ave., Brooklyn, N. Y.	1930
INGRAM, GEOFFREY CHESOLDEN SPENCER, 22 Waterloo Road, Roath, Cardiff, South Wales.	1928
ISENBERG, A. H., 286 Atherton Ave., Menlo Park, Calif.	1929
**ISHAM, CHARLES BRADLEY, 909 Valley Rd., Upper Montclair, N. J.	1891
IVES, FREDERICK MANLEY, JR., 27 Allen Rd., Winchester, Mass.	1930
JACKSON, CICEO FLOYD, Dean, Coll. Liberal Arts, Univ. N. H., Durham, N. H.	1936
JACKSON, DR. HARTLEY HARRAD THOMPSON, Biol. Survey, Washington, D. C.	1910
JACOBI, DR. ARNOLD, Museum für Tierkunde, Dresden 1, Germany.	1929
JACOBY, THOMAS EDWIN, 816 B St., N. E., Washington, D. C.	1931
JACOT, EDWARD CESAR, Box 462, Prescott, Arizona.	1923
JAMES, MRS. ALVIN ORLANDO, 4100 Grove Ave., Richmond, Va.	1925
JAMES, NORMAN, P. O. Drawer D2, Baltimore, Md.	1913
JANVRIN, DR. EDMUND RANDOLPH PEASLEE, 38 East 85th St., New York, N. Y.	1919
JANZEN, DANIEL H., U. S. Biol. Survey, East Lansing, Mich.	1936
JARRARD, MISS BERMA LUCILLE, 54 Briarcliff Circle, N. E., Atlanta, Ga.	1928
JAY, WILLIAM, 5358 Winghocking Terrace, Germantown, Philadelphia, Pa.	1921
JEFFERS, EDMUND E., 531 Thompson St., Ann Arbor, Mich.	1934
JELIER, FRANCISCUS PETER, Groote Visscherijstraat 19a, Rotterdam, Holland.	1928
JENKINS, LLOYD SMITH, 10 Ashmore Road, Worcester, Mass.	1932
JENKS, RANDOLPH, Mt. Kemble, Morristown, N. J.	1928
JENNER, WILLIAM ALEXANDER, 806 W. Davis St., Fayette, Mo.	1932
JENNINGS, RICHARD DUDLEY, 227 Harrison St., East Orange, N. J.	1913
JENNISON, FRANCIS JOSEPH, Seminole Club, Jacksonville, Fla.	1925
JENSEN, JESSE PETER, Box 364, Dassel, Minn.	1926
JESSMAN, MISS LENA M., 11 Linden St., River Rouge, Mich.	1935
JEWETT, MISS DOROTHY, 441 Baldwin Rd., Maplewood, N. J.	1936
JOHNSON, ARCHIBALD, Stewart, Nev.	1930
*JOHNSON, CHARLES ALFRED, 1030 15th St., Denver, Colo.	1927
JOHNSON, FRED., Downham Tavern, Bromley, Kent, England.	1934
JOHNSON, JULIUS MONROE, 293 S. Pleasant Ave., Ridgewood, N. J.	1933
JOHNSON, MURRAY LEATHERS, 4102 N. 38th St., Tacoma, Wash.	1935
JOHNSON, PROF. ROBERT ANTHONY, 150 East Street, Oneonta, N. Y.	1930
JOHNSTON, ISRAEL HAYLOCK, Conserv. Comm., Charleston, W. Va. (1922-33)	1934
JONES, FRED MINSON, Wise, Va.	1931
JONES, GORDON WILLIS, "Ellwood," Wilderness, Va.	1933
JONES, HAROLD CHARLES, 352 W. College St., Oberlin, Ohio.	1924
JONES, HAROLD ROBERT, 317 New York St., Scranton, Pa.	1935
JONES, JOHN COURTS, 3224 19th St., Washington, D. C.	1930
JONES, DR. LOMBARD CARTER, Falmouth, Mass.	1917

JONES, S(OLOMON) PAUL, 509 West Ave., North, Waukesha, Wis.....	1920
JONES, STERLING PRICE, 690 Bonita Ave., Webster Groves, Mo.....	1933
JONES, WILLIAM FROST, Norway, Maine.....	1918
**JORDAN, ALVAH HENRY BEDELL, Lowell, Wash.....	1888
JUNG, CLARENCE SCHRAM, 4612 N. Oakland Ave., Milwaukee, Wis.....	1921
JUNG, DR. WILHELM, Scheveningsche Weg 74, The Hague, Holland.....	1928
KASSOY, IRVING, 608 5th Ave., New York, N. Y.....	1929
KALTER, DR. LOUIS BIESER, 535 Belmont Pk. N., Dayton, Ohio.... (1930-35)	1936
KAY, LAMBDIN, 2332 Delwood Drive, N. W., Atlanta, Ga.....	1935
KEALY, MISS LULU, 14 Blackburn Ave., Ottawa, Ont., Can.....	1926
KEARNS, WILLIAM EUGENE, Box 51, Yellowstone Park, Wyo.....	1935
KEYS, JAMES EDWARD, 328 St. George St., London, Ont., Can.....	1899
KEEFER, MISS MARY BELLE, 1411 Montana St., El Paso, Texas.....	1936
KEESLER, RAY LEWIS, Box 147, Forestville, Butler Co., Pa.....	1924
KELLEY, NORMAN PANTON, 625 Oriole Parkway, Toronto, Ont., Can.....	1927
KELLOGG, JOHN P., 231 So. LaSalle St., Chicago, Ill.....	1934
KELLOGG, PAUL, 11 Church St., Cortland, N. Y.....	1929
KELLY, MRS. GEORGE EARLE, 1311 Grand St., Alameda, Calif.....	1929
KELLY, DR. HOWARD ATWOOD, 1406 Eutaw Place, Baltimore, Md.....	1934
KELLY, WILLIAM NIELSON, Terminal City Club, Vancouver, B. C., Can.....	1927
KELSO, LEON HUGH, Biol. Survey, Dept. Agr., Washington, D. C.....	1929
KENNEDY, DR. HARRIS, Readville 37, Mass.....	1916
*KENNEDY, HARRY HOWARD, 230 Stonewall Road, Oakland, Calif.....	1920
KENNEDY, HOMER NEY, Box 294, Rosslyn, Va.....	1935
KENT, DUANE ELSON, 39 Moore Place, Rutland, Vt.....	1913
KENT, EDWARD GRUET, 9 Highland Ave., Madison, N. J.....	1919
KENT, EDWIN CLARK, 80 William St., New York, N. Y.....	1907
KENTON, KARL WALTON, 6001 Bellevue Road, La Jolla, Calif.....	1933
KEPNER, MRS. CLYDE METZGER, Pikesville Br. P. O., R. D. 7, Baltimore, Md.....	1922
KERMODE, FRANCIS, Provincial Museum, Victoria, B. C., Can.....	1926
*KIDDER, NATHANIEL THAYER, Milton, Mass.....	1906
KILGORE, WILLIAM, JR., Mus. Nat. Hist., Univ. Minn., Minneapolis, Minn....	1906
KILGUS, JOHN FRANK, JR., 422 High St., Williamsport, Pa.....	1922
KING, LEROY, 1 Cedar St., New York, N. Y.....	1901
KINGSBURY, MISS ELIZABETH WINCHESTER, 72 Barrow St., New York, N. Y....	1931
KINGSLEY, MISS WINIFRED, 522 East Main St., Bellevue, Ohio.....	1935
KINSEY, ERIC CAMPBELL, 155 Bothin Road (P. O. Box 76), Manor, Marin Co., Calif.....	1936
*KIRKHAM, STANTON DAVIS, 152 Howell St., Canandaigua, N. Y.....	1910
KIRKPATRICK, DONALD NORRIS, 710 Clay Ave., Scranton, Pa.....	1926
KIRKPATRICK, HARRY CLAY, 1166 Water St., Meadville, Pa.....	1921
**KIRKWOOD, FRANK COATES, Phoenix, Baltimore Co., Md.....	1892
*KIRN, ALBERT JOSEPH BERNARD, Box 157, Somerset, Texas.....	1918
KITTREDGE, JOSEPH, JR., Div. Forestry, Univ. California, Berkeley, Calif.....	1910
KLAPP, W. P., JR., Deputy Game Protector, Paoli, Pa.....	1936
KLINCK, NORMAN E., 38 West Parade Ave., Buffalo, N. Y.....	1928
KLOSEMAN, MISS JESSIE EMMA, 60 Charlesgate East, Suite 127, Boston, Mass.....	1909
*KLOTZ, CHARLES DOLESE, P. O. Box 142, Pearisburg, Va.....	1923
KNAEBEL, ERNEST, 3707 Morrison St., Washington, D. C.....	1906
KNAPP, ELMER, R. R. 2, Troy, Pa.....	1929

KNAPPEN, MISS PHOEBE MALURA, 2925 Tilden St., N. W., Washington, D. C.	1924
KNECHTEL, GERALD WILLIAM, 33 Ahrens St., West, Kitchener, Ont., Canada	1935
*KNICKERBOCKER, CHARLES KENNEDY, 410 N. Michigan Ave., Chicago, Ill.	1922
KOBBE, FREDERICK WILLIAM, 1155 Park Ave., New York, N. Y.	1921
KRAMER, THEODORE CHRISTIAN, Dept. Anat., East Med. Bldg., Ann Arbor, Mich.	1930
KRAUS, PHILIP BERKELEY, 92 Keene St., Providence, R. I.	1930
KRETZMANN, DR. PAUL EDWARD, 801 DeMun Ave., St. Louis, Mo.	1913
KRUG, HOWARD HENRY, Chesley, Ont., Can.	1932
KUBICHEK, WESLEY FRANK, Biol. Survey, Washington, D. C.	1919
KUERZI, JOHN FRANCIS, 978 Woodycress Ave., Bronx, New York, N. Y.	1925
KUMMERLOEWE, DR. HANS, Museum für Tierkunde, Dresden, Germany	1928
KUSCHKE, ARTHUR WYNDHAM, JR., 181 N. Franklin St., Wilkes-Barre, Pa.	1935
KUSER, JOHN DRYDEN, 30 Broad St., New York, N. Y.	1910
LABARTHE, JULES, c/o N'Kana Mine, N'Kana via N'Dola, Northern Rhodesia, S. Africa	1920
LABRIE, WILLIE, Kamouraska (Moulin), Que., Can.	1927
LACEY, MILTON SILLIMAN, 875 Maine St., Bridgeport, Conn.	1925
LADD, MISS MABEL CLAIR, 5705 Woodward Ave., Detroit, Mich.	1931
LA DOW, STANLEY VAUGHAN, 56 W. 12th St., New York, N. Y.	1913
LAING, HAMILTON MACK, Comox, B. C., Can.	1917
LAKELA, MRS. OLGA, State Teachers College, Duluth, Minn.	1936
LA MAR, MISS KATE, 1231 39th St., Des Moines, Iowa	1934
LAMB, CHESTER CONVERSE, 235 W. 27th St., Los Angeles, Calif.	1926
LAMBERT, DR. ADRIAN VAN SINDEREN, 168 E. 71st St., New York, N. Y.	1930
LAMBERT, BERT, Allenville, Mich.	1936
LANCELEY, WILLIAM HENRY, 23 Elmdale Ave., Ottawa, Ont., Can.	1926
LANG, EDWARD BALDWIN, 156 Joralemon St., Belleville, N. J.	1935
LANGDON, ROY MONROE, Rt. 5, Box 530, Phoenix, Ariz.	1918
LANGELIER, DR. GUSTAVE ADOLPHE, R. R. 1, Fanbourg, St. Jean Baptiste, Que., Can.	1923
LANGSTROTH, JAMES HEIDEL, Silver City, N. M.	1924
LARGE, JOHN WARREN, Box 904, Reading, Pa.	1929
LARGE, DR. W(ALLACE) BRUCE, 6 North Goodman St., Rochester, N. Y.	1933
LARRABEE, PROF. AUSTIN PARK, 306 E. 15th St., Yankton, S. Dak.	1918
LASKEY, MRS. FREDERICK CHARLES, Graybar Lane, Nashville, Tenn.	1933
LASTRETO, CHARLES BARTHOLOMEW, 260 California St., San Francisco, Calif.	1919
LATHAM, ROY, Orient, L. I., N. Y.	1916
LAUCKHART, J. BURTON, R. D. 1, Lynden, Wash.	1935
LAUGHLIN, LEDLIE I., Drake's Corner Road, Princeton, N. J.	1936
LAURENT, PHILIP, 31 Mt. Airy Ave., Philadelphia, Pa.	1902
LAWRENCE, ALEXANDER GEORGE, City Health Dept., Winnipeg, Man., Can.	1920
LAWRENCE, ROBERT BOWNE, 411 Westmoreland Ave., Houston, Texas	
	(1883-1900) 1923
LAWSON, RALPH, 88 Washington Sq., East, Salem, Mass.	1917
LAZEAR, JOHN MCKELVEY, 922 S. Negley Ave., Pittsburgh, Pa.	1922
LEES, WILLIAM ANDREW DICKSON, Box 138, Wetaskiwin, Alta., Can.	1935
LEFEVRE, RUFUS HARRY, 605 Burroughs Dr., Snyder, N. Y.	1927
LEHRMAN, DANIEL S., 136 W. 168th St., The Bronx, New York	1936
LEISTER, CLAUDE WILLARD, Zoöl. Park, 185th St. & Southern Blvd., New York, N. Y.	1916

LEMON, EARL, West Lorne, Ont., Can.	1935
LEONARD, MISS MARY BEECHER, 30 Barnes St., Providence, R. I.	1930
LERMOND, NORMAN WALLACE, R. F. D. 1, Thomaston, Maine	1921
LEWIS, JOHN BARZILLAI, P. O. Box 86, Amelia, Va.	1924
LEWIS, MERRIAM GARRETSON, Langhorne Place, Salem, Va.	1924
LEWIS, NORMAN, Schuyler Heights, Lake George, N. Y.	1935
LEWY, DR. ALFRED, 2051 E. 72d Place, Chicago, Ill.	1922
LINCOLN, ALEXANDER, JR., 59 Cadman Road, Brookline, Mass.	1934
LINDSEY, ALTON ANTHONY, 119 Eddy St., Ithaca, N. Y.	1931
LINGS, GEORGE HERBERT, Barcicroft, Didsbury, Manchester, England	1913
LINK, GUSTAVE ADOLPH, JR., Carnegie Museum, Pittsburgh, Pa.	1936
LINTON, MORRIS ALBERT, 315 East Oak Ave., Moorestown, N. J.	1928
LITTLE, MISS MARIAN W., 346 West Baltimore Ave., Media, Pa.	1936
LIVINGSTON, PHILIP ATLEE, 35 Sabine Ave., Narberth, Pa.	1927
LLOYD, MRS. WILMOT, 582 Mariposa Ave., Rockcliffe Park, Ottawa, Ont., Can.	1925
LOBODA, LOUIS ANTHONY, Box 135, New Lisbon, Wis.	1935
LOFSTROM, LAWRENCE LEVI, Cambridge, Minn.	1935
LOMAX, DR. CLAUDE, 503 So. Willow Rd., Evansville, Ind.	1933
LONG, GEORGE BAKER, 56 Hawes St., Brookline, Mass.	1935
LONG, HARRY VINTON, 260 Clarendon St., Boston, Mass.	1920
LONG, WILLIAM HENRY, JR., 1612 Morton Ave., Ann Arbor, Mich.	1933
LONG, W. S., c/o Soil Conserv. Service, Colorado Springs, Colo.	1935
LONGSTREET, RUBERT JAMES, 610 Braddock Ave., Peninsula Sta., Daytona Beach, Fla.	1923
LÖPPENTHIN, BERNT OVE HARTVIG FABRICIUS, Søndre Fasanvej 31 Itv., Copenhagen F., Denmark	1928
LORD, DR. FREDERIC POMEROY, 39 College St., Hanover, N. H.	1922
LORING, JOHN ALDEN, Owego, Tioga Co., N. Y.	1917
LOTHROP, DR. OLIVER AMES, 101 Beacon St., Boston, Mass.	1920
LOW, DANIEL STORY, 16 Cypress St., Marblehead, Mass.	(1922-27) 1930
LOW, ETHELBERT IDE, 256 Broadway, New York, N. Y.	1907
LOW, SETH HASKELL, Des Lacs Waterfowl Refuge, Kenmore, N. D.	1930
LOW, WARWICK JAMES, 4076 Highland Ave., Montreal, Que., Can.	1923
LOWERY, GEORGE HINES, JR., Dept. Zoöl., Louisiana State University, Baton Rouge, La.	1934
*LOWNES, ALBERT E., P. O. Box 1531, Providence, R. I.	1924
LUMLEY, ELLSWORTH DUGANNE, Lincoln High School, Seattle, Wash.	1933
LUNN, MISS MARGARET ALLEN, Apt. 502, The Keystone, Washington, D. C.	1919
LUNN, WILLIAM HERBERT, Hillier, Ont., Can.	1935
LYON, DR. MARCUS WARD, JR., 214 La Porte Ave., South Bend, Ind.	1922
MACCOY, CLINTON VILAS, Boston Soc. Nat. Hist., 234 Berkeley St., Boston, Mass.	1920
MACCRACKEN, DR. WALTER H., Wayne Univ. College of Medicine, 1516 St. Antoine St., Detroit, Mich.	1931
MACK, HORACE GORDON, Guelph, Ont., Can.	1933
MACKAYE, JAMES, 6 College St., Hanover, N. H.	1921
MACKWORTH-PRAED, CYRIL WINTHROP, Dalton Hill, Albury, Surrey, England	1928
MACLAY, MARK WALTON, JR., 44 Wall St., New York, N. Y.	1905
MACLEAN, MISS DOROTHY WILLIAMS, 245 Grandview Terr., Hartford, Conn.	1931
MACLOGLIN, MRS. FFORDE EDWARD, 43 Inglewood Drive, Hamilton, Ont., Can.	(1923-1925) 1926

MACLULICH, DUNCAN ALEXANDER, Royal Ontario Mus. Zoöl., Toronto 5, Ont., Can.....	1931
MACNUTT, ERNEST GERRARD, 4308 Montrose Ave., Montreal, Can.....	1928
MADDOCK, MISS EMELINE, The Marchwood, 5575 Wissahickon Ave., Germantown, Philadelphia, Pa.....	1897
MADDOX, JOHN RANDOLPH, Dillsburg, Pa.....	1934
MADISON, HAROLD LESTER, Director Cleveland Mus. Nat. Hist., 2717 Euclid Ave., Cleveland, Ohio.....	1912
MAGEE, MICHAEL JARDEN, 603 South St., Sault Ste. Marie, Mich.....	1919
MAGUIRE, WALTER STANLEY, Y. M. C. A., New Westminster, B. C., Can.....	1935
MAHER, JOHN EDWARD, 118 Adelphi St., Roselle, N. J.....	1902
MAIN, JOHN SMITH, 2210 Van Hise Ave., Madison, Wis.....	1926
MAINSTER, RAYMOND WAITE, Sylvan Drive, Woodlawn, Baltimore Co., Md.....	1935
MALCOMSON, HERBERT THOMAS, Glenorchy, Hawthornden Rd., Knock, Belfast, N. Ireland.....	1928
MALLEY, PHILIP PATRICK, 2925 Wellman Ave., New York, N. Y.....	1934
MANGELS, FREDERICK PAUL, 323 Wilson Ave., Bellmore, N. Y.....	1935
MANIGAUULT, EDWARD, Box 131, Route 1, Charleston, S. C.....	1931
MANLEY, CALVERT HAMILTON, 649 Ridge Ave., New Kensington, Pa.....	1936
MANN, DR. WILLIAM M., Nat. Zoöl. Park, Washington, D. C.....	1925
MANSELL, WILLIAM CHARLES, Baby Point Crescent, Toronto, Ont., Can.....	1935
MAPLES, ASHLEY KILSHAW, 33 London Road, Spalding, England.....	1928
MARBLE, RICHARD MERRILL, Woodstock, Vt.....	1907
MARBURGER, CLIFFORD, Denver, Pa.....	1923
MARCOTTE, REV. LEON, St. Charles Seminary, Sherbrooke, Que., Can.....	1921
MARDEN, AARON, Eagle Id., South Harpswell, Maine.....	1924
MARESI, POMPEO M., 9 Reimer Rd., Scarsdale, N. Y.....	1929
MARKS, EDWARD SIDNEY, 655 Kearney Ave., Arlington, N. J..... (1915-31)	1933
MARSHALL, ALAN JOHN, "Glen Ayr," 152 Penshurst St., Penshurst, N.S.W., Australia.....	1934
*MARSHALL, MRS. ELLA MARIA ORMSBY, New Salem, Mass.....	1912
MARSHALL, RAYMOND OSCAR, c/o Ralph Walter, R. D. 4, Lisbon, Ohio.....	1932
MARSHALL, WILLIAM HAMPTON, Bear River Mig. Bird Refuge, Brigham City, Utah.....	1935
MARTIN, FRED IRVING, Rt. 1, Box 58, Manchester, N. H.....	1921
MARTIN, NELSON, 274 St. Clarens Ave., Toronto 4, Ont., Can.....	1928
MASLOWSKI, KARL HERBERT, 950 Glenwood Ave., Cincinnati, Ohio.....	1935
MASON, CHARLES RUSSELL, Box 861, Sanford, Fla.....	1936
MASON, MISS ETHEL ISABEL, Blackstone Hotel, 1016 17th St., N. W., Washington, D. C.....	1930
MASON, GEORGE CARRINGTON, 1015 Blair Ave., Hampton, Va.....	1933
MASON, ROBERT FRENCH, JR., 2415 California St., N. W., Washington, D. C.....	1929
MASON, MISS ROSALIE, c/o J. S. Mason, Route 5, Thomasville, Ga.....	1928
MASURE, RALF H., 5417 Ingleside Ave., Chicago, Ill.....	1936
MATHEWS, FERDINAND SCHUYLER, 17 Frost St., Cambridge, Mass.....	1917
MATHEWS, DR. FRANK PELLETREAU, 49 W. 52d St., New York, N. Y.....	1923
MATHEWS, ROBERT STUART, 49 West 52d St., New York, N. Y.....	1928
MATTISON, MISS MARY FRANCES, 463 North St., Anderson, S. C.....	1928
MAY, RICHARD MORRIS, 2233 N. 2d St., Harrisburg, Pa.....	1933
MAYAUD, NOEL, 1 rue de Bordeaux, Saumur, Maine et Loire, France.....	1927

MAYER, JOHN, 122-67 134th St., South Ozone Park, L. I., N. Y.....	1936
MAYER, KARL R., Box 497, Cleveland, Tenn.....	1936
MATFIELD, DR. GEORGE RADFORD, Calhoun Hall, Nashville, Tenn.....	1917
MAYNARD, DR. EDWIN POST, JR., 85 Pierrepont St., Brooklyn, N. Y.....	1933
MAYNARD, DR. HERBERT ERNEST, 464 Commonwealth Ave., Boston, Mass.....	1921
McCABE, THOMAS TONKIN, Mus. Vert. Zoöl., Univ. Calif., Berkeley, Calif.....	1920
McCALL, WILLIAM WHITE, 721 Millbrook Lane, Haverford, Pa.....	1921
McCANN, HORACE DOLBEY, Valley Road, Paoli, Pa.....	1923
McCLANAHAN, ROBERT CHARLES, 1700 E. Avery St., Pensacola, Fla.....	1936
McCLINTOCK, NORMAN, c/o Rutgers Univ., New Brunswick, N. J.....	1900
McCONNELL, MISS MARY LOU, 151 Center Ave., Bellevue Sta., Emsworth, Pa.....	1936
**McCOOK, HON. PHILIP JAMES, Supreme Court, New York, N. Y.....	1895
McCORMICK, DR. DONALD J., 301 West 7th St., Chester, Pa.....	1936
McCORMICK-GOODHART, LEANDER, Langley Park, Silver Spring, Md.....	1927
McCOY, HERBERT N(EWBY), 1226 Westchester Place, Los Angeles, Calif.....	1930
McCREARY, OTTO, Agr. Hall, Univ. Wyoming, Laramie, Wyo.....	1932
McCULLAGH, DR. ERNEST PERRY, Cleveland Clinic, 2020 E. 93d St., Cleve- land, Ohio.....	1934
McDONALD, NORMAN JOHN, 8341 Germantown Ave., Chestnut Hill, Phila- delphia, Pa.....	1935
McDOUGALL, ERIC GRAHAM, Roy. Ontario Mus. Zoöl., 100 Queen's Park, Toronto, Ont., Can.....	1933
McGAHEY, MISS HONORA PEARL, 193 O'Connor St., Ottawa, Can.....	1926
McGraw, HARRY A., 1600 5th Ave., Altoona, Pa.....	1936
**McLHENNY, EDWARD AVERY, Avery Island, La.....	1894
McILWAINE, DR. W(ILLIAM) BAIRD, JR., 208 S. St. Asaph St., Alexandria, Va.....	1933
McILWRAITH, THOMAS FORSYTH, 50 St. Leonard's Ave., Toronto 12, Ont., Can.....	1933
McINTOSH, DUNCAN HYNES, 309 Payne St., Auburn, Ala.....	1931
McKENNY, MISS MARGARET, Am. Mus. Nat. Hist., New York, N. Y.....	1926
McKITTRICK, THOMAS HARRINGTON, JR., Coombe Place, East Grinstead, Sussex, England.....	1928
**McLAIN, ROBERT BAIRD, P. O. Box 132, Hollywood Sta., Los Angeles, Calif.....	1893
McLEAN, DONALD DUDLEY, 101 E. St. James St., San José, Calif.....	1930
McLENNAN, JAMES PIRRIE, Box 143, Ossining, N. Y.....	1935
McMANUS, REID, JR., Memramcook, New Brunswick, Can.....	1930
McMASTER, MRS. WILLIAM DAVID, 1030 S. State St., Belvidere, Ill.....	1935
McMULLEN, TURNER ELLSWORTH, 933 N. 5th St., Camden, N. J.....	1920
McNEIL, DR. CHARLES ANDREW, 111½ W. 4th St., Sedalia, Mo.....	1919
McNUTT, MISS DOROTHEA ROSALIE, Greensboro College, Greensboro, N. C.....	1930
McQUISTON, HOWARD MEDE, 372 Jefferson Ave., Sharon, Pa.....	1934
MEAD, MRS. ELDORA MEHITABLE, 51 E. 78th St., New York, N. Y.....	1904
MEAD, LYLE GAGE, 709 N. Pine Ave., Austin Sta., Chicago, Ill.....	1921
MEADE, DR. GORDON MONTGOMERY, Trudeau Sanatorium, Saranac, N. Y.....	1936
MEADOW, MEYER, 568 W. 149th St., c/o Geisler, New York, N. Y.....	1931
MEANLEY, MORTIMER BROOKE, 4710 Keswick Rd., Roland Park, Baltimore, Md.....	1935
MEANS, ROBERT WHITMAN, 45 Vernon St., Brookline, Mass.....	1932
MEDSGER, OLIVER PERRY, 9 Columbia Ave., Arlington, N. J.....	1919
MELCHER, MRS. CHARLES WOODBURY, Homosassa Springs, Fla.....	1922
MENDALL, HOWARD, 28 Pendleton St., Brewer, Maine.....	1934
MENGEL, GEORGE HENRY, 739 Madison Ave., Reading, Pa.....	1913

MENNINGER, DR. WILLIAM CLAIRE, 1280 Duane St., Topeka, Kans.....	1919
MEREDITH, REX, 121 Monckton Ave., Quebec, Can.....	1927
MEREDITH, CAPT. RUSSELL LUFF, Boonton, N. J.....	1933
MERRILL, MRS. CHARLES HUDSON SAYRE, 95 Hineckley Road, Milton, Mass....	1924
MERRILL, DAYTON EUGENE, 5th and Sycamore Sts., Rogers, Ark.....	1913
MERRY, MISS KATHERINE, 268 Auburn Ave., Pontiac, Mich.....	1935
*MERSHON, WILLIAM BUTTS, Saginaw, Mich.....	1905
MESSER, DON VINAL, Huntington, Mass.....	1924
METCALF, JESSE, 8 W. 40th St., New York, N. Y.....	1926
METCALF, DR. ZENO PAYNE, State College Station, Raleigh, N. C.....	1913
*MEYER, MISS HELOISE, Lenox, Mass.....	1913
MEYER, WILLIAM HENRY KARLSRUH, Alpha Tau Omega House, State College, Pa.....	1933
MICHENER, HAROLD, 418 N. Hudson Ave., Pasadena, Calif.....	1926
MICKEY, ARTHUR B., Osceola, Nebr.....	1936
MIDDLETON, RAYMOND JONES, Marshall St., and Whitehall Road, Norristown, Pa.....	1920
MILLER, MISS BERTHA STUART, Capstone Farm, R. 3, Kingston, N. Y.....	1915
MILLER, REV. HENRY CHARLES, 29 Sheriden Drive, Monroe, Mich.....	1931
MILLER, HOWARD BURNETT, 4 High St., Turners Falls, Mass.....	1935
MILLER, J(OHN) PAUL, P. O. Box 51, Mill Village, N. H.....	1932
MILLER, MISS MARY MANN, 5928 Hayes Ave., Los Angeles, Calif.....	1921
MILLER, ROBERT CUNNINGHAM, Dept. Zoöl., Univ. Wash., Seattle, Wash.....	1935
MILLS, DUDLEY HOLBROOK, Glen Cove, L. I., N. Y.....	1929
MILLS, WIER ROBSON, Pierson, Iowa.....	1920
MILNES, MISS HARRIET KERNAHAN, 331 Gowen Ave., Mt. Airy, Philadelphia, Pa.....	1934
MIRICK, HENRY DUSTIN, 3637 Locust St., Philadelphia, Pa.....	1925
MITCHELL, MISS CATHARINE ADAMS, 144 Fairbank Road, Riverside, Ill.....	1911
MITCHELL, HAROLD DIES, 378 Crescent Ave., Buffalo, N. Y.....	1930
MITCHELL, HORACE HEDLEY, 1232 15th Ave., Regina, Sask., Can... (1913-15)	1918
MITCHELL, MRS. OSBORNE SINDEN, Apt. 8, 69 Oriole Rd., Toronto, Ont., Can.	1928
**MITCHELL, DR. WALTON IUNGERICH, 1644 Visalia St., Berkeley, Calif.....	1893
MOFFITT, JAMES, 1879 Broadway, San Francisco, Calif.....	1926
MOLONEY, LAWRENCE J., JR., 18600 Mussland Ave., Detroit, Mich.....	1936
MOLONY, CHARLES EDMUND GIBSON, 3 Elm Ave., Toronto, Ont., Can.....	1935
MONK, HARRY CRAWFORD, 3108 Long Blvd., Nashville, Tenn.....	1921
MONROE, BURT LEAVELLE, 207 N. Birchwood Ave., Louisville, Ky.....	1935
MOODY, ADELBERT JOHN, c/o Aetna Life Ins. Co., Hartford, Conn.....	1918
MOORE, FREDERICK, JR., 1920 Vail Ave., Charlotte, N. C.....	1935
MOORE, JOHN ALEXANDER, 60 W. 10th St., New York, N. Y.....	1930
MOORHEAD, HORACE REYNOLDS, Apt. 3 East, 1155 Park Ave., New York, N. Y.....	1926
MORE, ROBERT LEE, 1905 Wilbarger St., Vernon, Texas..... (1911-15)	1921
MOREHOUSE, BEAUMONT JOHN, Forestby, Branchville, Conn.....	1926
MOREY, MRS. LILLIAN DAME, Pinehurst Circle, Chevy Chase, Md.....	1924
MORGAN, BRENT MACFARLAND, 210 10th St., S. W., Washington, D. C.....	1919
*MORGAN, JOHN SAGE, 27 Circuit Road, Chestnut Hill, Mass.....	1927
MORRELL, DR. ARCH HIRAM, 210 Maine Ave., Gardiner, Maine.....	1923
MORRILL, RALPH EVERETT, 1217 Olivia Ave., Ann Arbor, Mich.....	1936

MORRIS, MISS GRACE ALGER, Eagle Rock, Pa.....	1924
*MORRIS, DR. LEWIS RUTHERFORD, 1030 Fifth Ave., New York, N. Y.....	1923
MORRISON, ALASTAIR ROBIN GWYN, The Oaks, Paddockhall Road, Haywards Heath, Sussex, England.....	1934
MORRISON, ALVA, 100 Milk St., Boston, Mass.....	1915
MORSE, FRANK EUGENE, 939 Elm St., Manchester, N. H.....	1921
MORSE, GEORGE WASHINGTON, 318 East 9th St., Tulsa, Okla.....	1922
MORSE, MISS MARGARETTE ELTHEA, 11432 Mayfield Rd., Cleveland, Ohio.....	1919
MOSELEY, PROF. EDWIN LINCOLN, Bowling Green, Ohio.....	1918
MOSTOLLER, RALPH VICKROY, Stoystown, Pa.....	1936
MOULTON, FRANCIS SEVERN, 215 Canton Ave., Milton, Mass.....	1926
MOULTON, HERBERT FRANCIS, 132 North St., Ware, Mass.....	1920
MOWAT, FARLEY, Public Library, Saskatoon, Sask., Can.....	1935
MOYER, JOHN WILLIAM, Field Mus. Nat. Hist., Chicago, Ill.....	1928
MUELLER, WALTER JOSEF, 3043 North Prospect Ave., Milwaukee, Wis. (1928-30).....	1934
MULLEN, ROBERT ALEXANDER, 5404 Galena Place, N. W., Washington, D. C.....	1933
MUNN, CAPT. PHILIP WINCHESTER, Puerto Alcudia, Majorca, Balearic Isles, Spain.....	1929
MUNTER, CAPT. WILLIAM HENRY, U. S. Coast Guard, 806 Wilkins Bldg., Wash- ington, D. C.....	1927
MURIE, DR. ADOLPH, 305 Underwood Bldg., San Francisco, Calif.....	1931
MURPHEY, DR. EUGENE EDMUND, 432 Telfair St., Augusta, Ga.....	1934
MURPHY, MRS. GRACE EMELINE BARSTOW, 45 Oriole Ave., Bronxville, N. Y.....	1919
MURPHY, MISS LOUISE, 1535 Summerhill Ave., Montreal, Can.....	1932
MURPHY, PAUL, 53 New England Ave., Summit, N. J.....	1934
MURRAY, EDGAR ANTHONY, 3431 Seminole Drive, Detroit, Mich.....	1919
MUSGRAVE, DR. JOHN KNOX, 350 Parkway Drive, Pittsburgh, 16, Pa.....	1936
MUSSELMAN, THOMAS EDGAR, 124 S. 24th St., Quiney, Ill.....	1922
MYERS, MRS. B. F., 7716 Navajo St., Chestnut Hill, Philadelphia, Pa.....	1902
MYERS, MRS. HARRIET WILLIAMS, 311 N. Ave. 66, Los Angeles, Calif.....	1906
MYRLAND, ARTHUR LUCIUS, Magdalena, New Mexico.....	1936
MYRUS, ADOLPHE A., 81 Ford Ave., Oneonta, N. Y.....	1936
NAESER, CHARLES RUDOLPH, Dept. Chemistry, Geo. Washington Univ., Wash- ington, D. C.....	1934
NAUMBURG, WALTER WEHLE, Box 371, New Canaan, Conn.....	1923
*NEELY, JAMES COLUMBUS, 135 High St., Brookline, Mass.....	1919
NEELY, WILLIAM W., 149 West End St., Chester, S. C.....	1936
NEFF, JOHNSON ANDREW, U. S. Biol. Survey, P. O. Box 1317, Sacramento, Cal.....	1919
NELLES, ARTHUR, 223 McLeod St., Ottawa, Ont., Can.....	1935
NELSON, ARNOLD LARS, Biol. Survey, Washington, D. C.....	1931
NELSON, MISS THEODORA, 2695 Heath Ave., Bronx, New York, N. Y.....	1927
NETTING, MORRIS GRAHAM, JR., Carnegie Museum, Pittsburgh, Pa.....	1925
NEWBOLD, CLEMENT BIDDLE, Gate Farm, Jenkintown, Pa.....	1929
NEWCOMB, CYRENUS ADELBERT, JR., Rt. 3, Pontiac, Mich.....	1920
NEWELL, MRS. H. S., Board of Trade Bldg., Duluth, Minn.....	(1912-18) 1926
NEWMAN, THOMAS HENRY, 46 Forty Avenue, Wembley Park, Middlesex, Eng- land.....	1936
NICHOLS, CHARLES KETCHAM, 212 Hamilton Rd., Ridgewood, N. J.....	1931
NICHOLS, MRS. CHARLES KETCHAM, 212 Hamilton Rd., Ridgewood, N. J.....	1933

NICHOLS, LEON NELSON, 315 E. 68th St., New York, N. Y.	1917
NICHOLS, RODMAN ARMITAGE, 7 S. Pine St., Salem, Mass.	1919
NICHOLSON, DONALD JOHN, P. O. Box 631, Orlando, Fla.	1925
NICOL, ARTHUR COLIN, 111 Wolseley Ave., Montreal West, Can.	1933
NIEDERAUR, FRANK LEE, JR., 322 So. Lynn St., Bryan, Ohio	1936
NIEDRACH, ROBERT JAMES, Colo. Mus. Nat. Hist., Denver, Colo.	1935
NILSEN, NILS MARIUS, 1101 3d Ave., New York, N. Y.	1931
NININGER, PROF. HARVEY HARLOW, 1955 Fairfax St., Denver, Colo.	1920
NOKES, DR. IRWIN DANA, 1120 Rives Strong Bldg., Los Angeles, Calif.	1915
NOLAN, THOMAS BRENNAN, U. S. Geol. Survey, Washington, D. C.	1935
NORRIS, EDWARD, 301 W. Springfield Ave., Philadelphia, Pa.	1916
NORTH, GEORGE WEBSTER, 249 Charlton St., West, Hamilton, Ont., Can.	1935
NORTON, JAMES HORACE, 56 Ridge Road, Pleasant Ridge, Royal Oak, Mich.	1932
O'BRIEN, CHARLES EDWARD, Am. Mus. Nat. Hist., New York, N. Y.	1929
O'BRIEN, JOHN ERWIN, JR., 3750 Sheridan Road, Chicago, Ill.	1926
O'BRIEN, MISS MARY, 200 Mass. Ave., N.W., Washington, D. C.	1936
ODELL, THEODORE TELLEFSEN, 403 Pulteney St., Geneva, N. Y.	1926
ODUM, EUGENE PLEASANTS, Biol. Lab., Western Reserve Univ., Cleveland, Ohio	1932
OEHLenschlaeger, MISS ELIZABETH AUGUSTE, The Hammocks, Sta. C, Route 6, Milwaukee, Wis.	1934
OEHSER, PAUL HENRY, U. S. National Museum, Washington, D. C.	1925
OGBURN, CHARLTON, JR., 44 Randolph Hall, Cambridge, Mass.	1929
O'LEARY, ARTHUR LAWRENCE, 1033 Lawrence St., N. E., Washington, D. C.	1926
OLIVIER, GEORGES, 6 Rue Chas. Flavigny, Elbeuf, Seine Inférieure, France	1935
OLSEN, HUMPHREY ADONIRAM, Caney Jr. High School, Pippapass, Ky.	1930
OLSEN, DR. RICHARD ELLSWORTH, St. Joseph Mercy Hospital, Pontiac, Mich.	1930
O'MEARA, DAVID, 1210 Crescent Ave., Fort Wayne, Ind.	1933
ORTH, JOHN C., 324 Marbledale Road, Tuckahoe, N. Y.	1936
OSBORN, MISS MARY ELIZABETH, Cushing House, Smith College, Northampton, Mass.	1929
OSLER, GLYN FEATHERSTON, 360 St. James St., Montreal, P. Q., Can.	1934
OETROM, FRANK HILTON, 21 Prince Rupert Apts., 585 O'Connor St., Ottawa, Ont., Can.	1928
OVER, WILLIAM HENRY, 125 Harvard St., N., Vermilion, S. Dak.	1921
OVERING, ROBERT, Landover, Md.	1929
*OWEN, MISS JULIETTE AMELIA, 306 N. 9th St., St. Joseph, Mo.	1897
OWENS, CHARLES MELVIN, R. D. 4, Monticello, Ark.	1934
OWRE, OSCAR, JR., 2625 Newton Ave. So., Minneapolis, Minn.	1934
*PACK, ARTHUR NEWTON, Ghost Ranch, Abiquin, N. Mex.	1929
PACKARD, FRED MALLERY, 181 High St., Passaic, N. J.	1935
PACKARD, WINTHROP, 1442 Washington St., Canton, Mass.	1917
PAFF, WILLIAM ALFRED, 916 Paxinosa Ave., Easton, Pa.	1927
**PAINE, AUGUSTUS GIBSON, JR., 31 E. 69th St., New York, N. Y.	1886
PALMER, C(LARENCE) MORTIMER, JR., Investment Bldg., 15th & K Sts., N. W., Washington, D. C.	1931
*PALMER, MISS ELIZABETH DAY, 1741 S. Harvard Blvd., Los Angeles, Calif.	1918
PALMER, RALPH SIMON, Route 1, Box 11, Brunswick, Maine	1932
PALMER, DR. SAMUEL COPELAND, Swarthmore College, Swarthmore, Pa.	1899
PALMER, MRS. THEODORE SHERMAN, 1939 Biltmore St., N. W., Washington, D. C.	1918

PANGBURN, CLIFFORD HAYES, Chappaqua, N. Y.	1907
PARK, CHARLES FREDERICK, JR., U. S. Geol. Survey, Washington, D. C.	1936
*PARKER, EDWARD LUDLOW, Nashawtuc Road, Concord, Mass.	1916
PARKER, HARRY CLARENCE, Mus. Nat. Hist., 12 State St., Worcester, Mass.	1927
PARKER, HERBERT, South Lancaster, Mass.	1920
PARKER, KENNETH, 1000 Milwaukee Ave., Janesville, Wis.	1936
PARRY, EDWARD HICKS, Box 84, Wyncote, Pa.	1929
PARTRIDGE, MISS SARAH WARING, Fla. Comm. Game, State Capitol, Tallahassee, Fla.	1936
PATTEN, DR. STEPHEN KERR, 141 Milk St., Boston, Mass.	1920
PATTERSON, JOHN ELLIOT, 341 Giannini Hall, Univ. Calif., Berkeley, Calif.	1929
PATTIE, PROF. FRANK ACKLEN, JR., Rice Institute, Houston, Texas	1936
PATTERSON, THOMAS DORRINGTON, 562 Waterloo St., London, Ont., Can.	1935
PAUL, LUCIUS H., 424 Carter St., Rochester, N. Y.	1908
PAUL, DR. ROBERT DORLAND, 1358 E. 47th St., Chicago, Ill.	1927
PEABODY, REV. PUTNAM BURTON, 2011 Park Ave., Topeka, Kans.	1903
PEAKE, ARTHUR LIONEL, Nanaimo, B. C., Can.	1927
PEARSALL, GORDON SAWYER, Field Museum, Chicago, Ill.	1931
PEARSE, THEED, P. O. Box 158, Courtenay, Vancouver Id., B. C., Can.	1926
PEASE, MISS FLORENCE MABEL, Box 265, Conway, Mass.	1922
PEASLEY, MRS. HAROLD RAYMOND, 1807 6th Ave., Des Moines, Iowa	1934
PEET, DR. MAX MINOR, 2030 Hill St., Ann Arbor, Mich.	1933
PELL, STUYVESANT MORRIS, Pleasant Valley Bird Sanctuary, Lenox, Mass.	1932
PELLEW, MISS MARION JAY, "The Heights," Aiken, S. C.	1919
PEMBERTON, JOHN ROY, 3031 N. Lake Ave., Altadena, Calif.	1918
PENNOCK, DR. WINTHROP, 713 East Genesee St., Syracuse, N. Y.	1931
PEPPER, DR. WILLIAM, Melrose Park, Philadelphia, Pa.	1911
PEPPER, WILLIAM, JR., 110 Glenview Ave., Wyncote, Pa.	1930
PERINE, KEBLE BARNUM, 242 Islington Rd., Auburndale, Mass.	1917
*PERKINS, DR. ANNE ELIZABETH, Box 414, North Berwick, Maine	1917
PERKINS, DR. EDWARD HENRY, Box 52, Colby College, Waterville, Maine	1920
PERKINS, IRVING JAMES, Public Museum, Milwaukee, Wis.	1935
PERKINS, SAMUEL ELLIOTT, 3d, 709 Inland Bldg., Indianapolis, Ind.	1923
PERRY, EDGAR LEROY, State Game and Fish Warden, Santa Fé, N. M.	1928
PERRY, GEORGE LEWIS, 68 Thurston St., Winter Hill, Somerville, Mass.	1923
PERRY, JOHN ELMER, 956 W. 28th St., Erie, Pa.	1924
PERRY, THOMAS, JR., 2 Margin St., Westerly, R. I.	1936
PETERKIN, FREDERICK PEMBROKE, Kendal, St. John, Barbados, B. W. I.	1933
PETERS, ALBERT S., Donnybrook, N. Dak.	1908
PETERS, HAROLD SEYMOUR, U. S. Biol. Survey, Auburn, Ala.	1924
PETERSON, ALFRED, Box 211, Pipestone, Minn.	1920
PETERSON, MRS. CHARLES EMIL, 621 Hillcrest, Madison, Minn.	1932
PETERSON, NELS THEODORE, 80 Oaklawn Ave., Battle Creek, Mich.	1931
PETTINGILL, DR. OLIN SEWALL, JR., Dept. Zool., Carleton Coll., Northfield, Minn.	1930
PHELPS, FRANK MILLS, 312 5th St., Elyria, Ohio	1912
PHELPS, J. H., 1319 24th St., Ogden, Utah	1933
PHELPS, MRS. JOHN WOLCOTT, Box 158, Northfield, Mass.	1899
PHILIPP, FREDERICK BERNARD, West Rd. & Hobart Gap Rd., Short Hills, N. J.	1931
*PHILIPP, PHILIP BARNARD, 220 Broadway, New York, N. Y.	1907

PHILLIPS, ALLAN ROBERT, Mus. N. Arizona, Flagstaff, Ariz.....	1932
**PHILLIPS, PROF. ALEXANDER HAMILTON, 54 Hodge Road, Princeton, N. J.....	1891
PHILLIPS, CHARLES LINCOLN, 5 West Weir St., Taunton, Mass.....	1912
*PHILLIPS, JOHN MACFARLANE, 2227 Jane St., Pittsburgh, Pa.....	1920
PHINIZY, DR. IRVING, 753 Broad St., Augusta, Ga.....	1933
PICKENS, ANDREW LEE, Paducah Jr. College, Paducah, Ky.....	1925
PICKWELL, GAYLE BENJAMIN, Natural Science Dept., State Teachers Coll., San Jose, Calif.....	1924
PIERCE, FRED JOHN, Winthrop, Iowa.....	(1922) 1930
PIGGOT, JOHN WHITMAN, Bridgetown, N. S., Can.....	1927
*PIKE, EUGENE ROCKWELL, 2430 Lake View Ave., Chicago, Ill.....	1926
*PINCHOT, HON. GIFFORD, 1615 Rhode Island Ave., N. W., Washington, D. C.....	1910
PIRNIE, DR. MILES DAVID, Kellogg Bird Sanctuary, R. F. D. 1, Augusta, Mich.....	1919
PLATH, KARL, 2847 Giddings St., Chicago, Ill.....	1925
PLATT, CHARLES, JR., Morris Road, Ambler, Pa.....	1930
PLATT, HON. EDMUND, 136 Hampton Rd., Garden City, L. I., N. Y.....	1917
POE, MISS MARGARETTA, Earl Court, St. Paul & Preston Sts., Baltimore, Md.....	1899
POLAND, J(AMES) LLOYD, 526 W. Burke St., Martinsburg, W. Va.....	1935
POMEROY, FRED ELMER, Dept. Biology, Bates College, Lewiston, Maine.....	1920
PÖNITZ, STUDIENRAT HANS, Frankfurterstr. 2, Leipzig, Germany.....	1929
POOLE, EARL LINCOLN, Public Museum, Reading, Pa.....	1916
POOLE, FRAZER GLENDON, Federalsburg, Maryland.....	1934
POOR, HUSTACE HUBBARD, 112 Park Ave., Yonkers, N. Y.....	1934
PORSILD, ALF. ERLING, Dominion Lands Branch, Dept. Interior, Ottawa, Ont., Can.....	1934
**PORTER, LOUIS HOPKINS, Noroton Hill, Stamford, Conn.....	1893
PORTER, SYDNEY, The White Gates, Stenson Road, Derby, England.....	1930
PORTER, WILLARD BROWN, 5 Lee St., Salem, Mass.....	1922
POTHIER, ISRAEL JOSEPH, Lower Wedgeport, Yarmouth Co., Nova Scotia, Can.....	1933
POTTER, MISS JESSICA AVICE, 1118 Santee St., Los Angeles, Calif.....	1924
POTTER, JULIAN KENT, 437 Park Ave., Collingswood, N. J.....	1912
POTTER, LAURENCE BEDFORD, Gower Ranch, East End, Sask., Can.....	1919
POTTER, LOUIS HENRY, R. F. D. 2, West Rutland, Vt.....	1922
POTTS, FREDERICK ANDREW, Enseñada, Puerto Rico.....	1922
POUGH, RICHARD HOOPER, 1600 Sansom St., Philadelphia, Pa.....	1922
POWELL, MISS ISABEL MOBLEY, 29 Capiisic St., Portland, Maine.....	1931
**PRAEGER, WILLIAM EMILIUS, Kalamazoo College, Kalamazoo, Mich.....	1892
PRATT, DELBERT RANDALL, McKinley High School, Canton, Ohio.....	1932
PRENTISS, REV. WILLIAM CARLOS, 39 Gilbert St., North Brookfield, Mass.....	1921
PRESCOTT, MRS. SAMUEL CATE, 249 Tappan St., Brookline, Mass.....	1922
PRESNALL, CLIFFORD CHARLES, Zion Nat. Park, Utah.....	1933
PRESTON, CHARLES PUTNAM, Baynesville, Va.....	1936
PRESTON, RALPH CLAUSIUS, Tamarack Road, Port Chester, N. Y.....	1936
PRICE, CHARLES EVANS, JR., Woodward Ave., Moylan, Pa.....	1934
PRICE, JOHN BASYL, 532 Alvarado St., Stanford University, Calif.....	1931
PRICE, DR. LIGON, Dunmore, W. Va.....	1913
PRIEST, CAPT. CECIL DAMER, Wedza, Marandellas, S. Rhodesia, S. Africa.....	1927
PRILL, DR. ALBERT G., Scio, Oregon.....	1921
PRIMLEY, WALTER S., 125 Mary Street, Hubbard Woods, Ill.....	1934

PROCTOR, GEORGE NEWTON, 250 Beacon St., Boston, Mass.....	1919
*PROCTER, MRS. LILLIAN SANFORD, New Ashford, Lanesboro P. O., Mass.....	1928
*PROCTOR, WILLIAM, 430 Park Ave., New York, N. Y.....	1928
PURDIE, MISS EVELYN, 33 Whitefield Hall, 19 Garden St., Cambridge, Mass.....	1921
PURDY, WILLIAM BROWN, Box 114, Milford, Oakland Co., Mich.....	1921
QUARLES, EMMET AUGUSTUS, 139 E. 7th St., Plainfield, N. J.....	1918
QUATTLEBAUM, REV. WILLIAM DANIEL, 1925 Paloma St., Pasadena, Calif.....	1924
QUILLIN, ROY WILLIAM, 422 W. King's Highway, San Antonio, Texas.....	1920
QUINDRY, LELAND ARKELL, 7626 Greenview Ave. N., Rogers Park Sta., Chicago, Ill.....	1929
RACEY, KENNETH, 3262 West First Ave., Vancouver, B. C., Can.....	1921
RALFE, PILCHER GEORGE, Castletown, Isle of Man, England.....	1928
RAND, AUSTIN LOOMER, Am. Mus. Nat. Hist., New York, N. Y..... (1927-30)	1934
RANDALL, ROBERT NEAL, Georgetown, Colo.....	1934
RANEY, EDWARD C., 150 East St., Oneonta, N. Y.....	1933
RANLETT, MRS. LOUIS FELIX, 60 Montgomery St., Bangor, Maine.....	1931
RANSOM, WEBSTER HAMILTON, 708 W. 20th Ave., Spokane, Wash.....	1927
RAPP, FREDERICK WILLIAM, 125 E. Prairie St., Vicksburg, Mich.....	1922
RAPRAEGER, ELMER FREDERICK, Forest Service, Missoula, Mont.....	1935
*RAYMOND, OLNEY MARTIN, 25 Pierpont St., Brooklyn, N. Y.....	1930
RAZ, GEORGE FRANCIS, Box 83, Union Pier, Mich.....	1931
**REAGH, DR. ARTHUR LINCOLN, 39 Maple St., West Roxbury, Mass.....	1896
REATH, BENJAMIN BRANNAN, 2d, Merion Sta., Montgomery Co., Pa.....	1928
REDD, LEONARD, 2413 Mason St., Flint, Mich.....	1931
REED, MRS. CARLOS ISAAC, 269 E. Division St., Villa Park, Ill.....	1920
REED, MRS. CHARLES KELLER, 11 State St., Worcester, Mass.....	1925
REED, MISS CLARA EVERETT, Brookfield, Mass.....	1919
REESE, MRS. ROBERT MILLER, 517 Cameron St., Alexandria, Va.....	1920
REGAR, GEORGE BERTRAM, Copewell House, Rydal, Pa.....	1923
REGAR, HOWARD SEVERN, Summit Drive, Anniston, Ala.....	1916
REHN, JAMES ABRAM GARFIELD, Acad. Nat. Sci., Philadelphia, Pa.....	1901
REID, MRS. BRUCE, Gulf Refinery, Port Arthur, Texas.....	1918
REID, RUSSELL, 811 12th St., Bismarek, N. Dak.....	1919
REUSS, ALFRED HENRY, JR., 12910 S. Mozart St., Blue Island, Ill.....	1933
**RHODES, CHARLES JAMES, Bryn Mawr, Pa.....	1895
RHODES, SAMUEL NICHOLSON, 81 Haddon Ave., Haddonfield, N. J.....	1885
RICE, JAMES HENRY, JR., Brick House Plantation, Wiggins, S. C.....	1910
RICE, WARD JENNINGS, 5250 N. Pennsylvania St., Indianapolis, Ind.....	1913
RICH, MARCUS CHARLES, 92 Morningside Ave., New York, N. Y.....	1931
RICH, MISS NELLIE VANDERVOORT, 295 Ridge Rd., R. F. D. 3, Wethersfield, Conn.....	1923
RICHARDS, MISS HARRIET ELIZA, 36 Longwood Ave., Brookline, Mass.....	1900
RICHARDS, MISS RUTH, Clifton Sta., Fairfax Co., Va.....	1921
RICHARDS, TUDOR, Joy's Lane, Groton, Mass.....	1934
RICHARDSON, CARL, Prospect, Ore.....	1929
RICHARDSON, FRANK, 3616 Main St., Riverside, Calif.....	1935
RICHARDSON, GEORGE HUBERT, 182 Rusholme Road, Toronto, Ont., Can.....	1934
RICHARDSON, DR. LAURENCE ROBERT, Dept. Zool., McGill Univ., Montreal, Can.....	1935
RICHARDSON, WILLIAM B., R. D. 2, Box 1170, Porterville, Calif.....	1936

RICHARDSON, WILLIAM DERRICK, 4215 Prairie Ave., Chicago, Ill.	1917
*RICHARDSON, MRS. WILLIAM DERRICK, 4215 Prairie Ave., Chicago, Ill.	1925
RICHARDSON, DR. WYMAN, 229 Dudley Road, Newton Centre, Mass.	1920
RIDEOUT, MISS ANNIE LILLIAN, 15 Farragut Road, Swampscott, Mass.	1935
**RIDGWAY, JOHN LIVZEY, 635 No. Pacific Ave., Glendale, Calif.	1890
**RIKER, CLARENCE BAYLEY, 432 Scotland Road, South Orange, N. J.	1885
RIPLEY, R. WOLCOTT, 901 Lexington Ave., New York, N. Y.	1928
RITTER, WILLIAM CLARKE, 214 Thurston Ave., Ithaca, N. Y.	1929
RITTER, DR. WILLIAM EMERSON, Univ. California, Berkeley, Calif.	1929
*ROADS, MISS KATIE MYRA, 463 Vine St., Hillsboro, Ohio.	1929
ROBBINS, CHANDLER, JR., 124 Wentworth Ave., Wyoming, Ohio.	1934
ROBBINS, MISS MARY LOUISE, 1417 Belmont St., N. W., Washington, D. C.	1933
ROBERTS, HOWARD RADCLYFFE, Villa Nova, Pa.	1924
ROBERTS, WILLIAM ELY, 207 McKinley Ave., Lansdowne, Pa.	1902
ROBERTSON, HOWARD, 157 S. Wilton Drive, Los Angeles, Calif.	1911
ROBERTSON, JOHN MCBRAIR, Box 121, Buena Park, Orange Co., Calif.	1920
ROBINSON, ANTHONY WAYNE, 780 College Ave., Haverford, Pa.	1903
ROBINSON, CHARLES BONNYCASTLE, JR., Georges Mills, N. H.	1935
ROBINSON, HERBERT WILLIAM, 37 West Road, Lancaster, England	1928
ROBINSON, MISS RACHEL GORGAS, 780 College Ave., Haverford, Pa.	1928
ROCKEFELLER, J. S., 791 Park Ave., New York, N. Y.	1935
ROGERS, BERNARD FOWLER, JR., Rm. 1637, Box 4, 175 W. Jackson St., Chicago, Ill.	1930
ROGERS, CYRIL HAROLD, 4 Mill Road, Cambridge, Eng.	1931
ROGERS, MISS MABEL FLORENCE, 11 Fourth Ave., Ottawa, Ont., Can.	1921
ROGERS, MISS MABEL TITSWORTH, Milledgeville, Ga.	1934
ROGERS, REV. WALLACE, Oxford, Ga.	1921
ROGERS, MRS. WALTER E., 911 E. North St., Appleton, Wis.	1932
ROGERS, PROF. WALTER E., 911 E. North St., Appleton, Wis.	1935
ROLAND, CONRAD KESSLER, 4226 Parkside Ave., Philadelphia, Pa.	1917
**ROOSEVELT, HON. FRANKLIN DELANO, The White House, Washington, D. C.	1896
ROSE, FRANK HUBERT, Missoula, Mont.	1927
ROSE, GEORGE CHILDS, 178 Second St., Mineola, N. Y.	1920
ROSENE, WALTER, JR., Ogden, Iowa.	1934
ROSENE, WALTER MELVIN, P. O. Box 22, Ogden, Iowa	1928
ROSIER, EUGENE, Petit Saconnex, Geneva, Switzerland	1927
ROSS, CHARLES CHANDLER, 7924 Lincoln Drive, Chestnut Hill, Pa.	1936
ROSS, DOUGLASS ALEXANDER, Vineland Station, Ont., Can.	1935
ROSS, GEORGE HERBERT, 23 West St., Rutland, Vt.	1904
ROSS, HOLLIS TREVOR, 109 So. 3d St., Lewisburg, Pa.	1931
ROSS, DR. LUCRETIVS HENRY, 507 Main St., Bennington, Vt.	1912
ROSS, MISS MARJORIE RUTH, R. R. 5, Fairmont, W. Va.	1928
ROSS, REUBEN JAMES, 63 Wall St., New York, N. Y.	1922
ROSS, ROLAND CASE, 1820 Bushnell Ave., South Pasadena, Calif.	1925
ROSSIGNOL, GILBERT RICE, 1321 East 33d St., Savannah, Ga.	1928
ROUSE, REGINALD FREDERICK, 105 New St., Birmingham, England	1935
ROWLEY, JOHN STUART, 424 N. Valencia St., Alhambra, Calif.	1930
ROYALL, JORDAN BROOKS, Tallahassee, Fla.	1928
RUBEY, WILLIAM WALDEN, U. S. Geological Survey, Washington, D. C.	1934
RUBY, GEORGE DALLAS, 520 Clarendon St., Syracuse, N. Y.	1928

RUGG, HAROLD GODDARD, Dartmouth College, Hanover, N. H.	1919
RUPPERT, FRANK CULVER, 2032 4th Ave., Los Angeles, Calif.	1927
RUSSELL, HENRY NORRIS, JR., 79 Alexander St., Princeton, N. J.	1931
RUSSELL, DR. WHITFIELD LIGGETT, Box 22, Rhome, Texas	1934
RUST, HENRY JUDSON, Coeur d'Alene, Idaho	1918
RUTLEDGE, HUGH MIDDLETON, 35 Parkwood Ave., Charleston, S. C.	1936
RUTTER, RUSSELL JAMES, c/o Brodie Club, 100 Queen's Park, Toronto, Ont., Can.	1928
**SAGE, HENRY MANNING, Menands Road, Albany, N. Y.	1885
SAGE, MRS. MARY SEARL, Nat. Assn. Audubon Societies, 1775 Broadway, New York, N. Y.	1919
SALLEE, ROY MERRIDITH, 131 No. Normal St., Macomb, Ill.	1931
SALOMONSEN, FINN, Slotsholmsgade 16, Copenhagen, Denmark	1927
SALYER, J(OHN) CLARK, Biol Surv., Dept. Agr., Washington, D. C. (1919-25)	1931
SAMPSON, PROF. EDWARD, East Guyot Hall, Princeton, N. J.	1936
SAMPSON, WALTER BEHRNARD, 1005 N. San Joaquin St., Stockton, Calif.	1922
SAMPSON, WILLIAM FRANCIS, Pier 1, c/o Bay Transport Co., San Francisco, Cal.	1929
SANBORN, COLIN CAMPBELL, 1612 Pleasant St., Highland Park, Ill.	1911
*SANFORD, DR. LEONARD CUTLER, 245 Whitney Ave., New Haven, Conn.	1919
SANSOM, NORMAN BETHUNE, 110 Muskrat St., Banff, Alta., Can.	1928
SANTENS, REMI HENRI, Carnegie Museum, Pittsburgh, Pa.	1918
SARGENT, WILLIAM DUNLAP, Orchard Lane, Westport, Conn.	1930
SASS, HERBERT RAVENEL, 23 Legare St., Charleston, S. C.	1923
SATTERTHWAIT, MRS. ALFRED FELLENBERG, 806 W. Ohio St., Urbana, Ill.	1920
SAUNDERS, FREDERICK ALBERT, 8 Berkeley Place, Cambridge 38, Mass.	1923
SAUNDERS, GEORGE BRADFORD, 1115 N. E. 11th St., Oklahoma City, Okla.	1925
SAUNDERS, RICHARD MERRILL, 17 Elgin Ave., Toronto, Ont., Can.	1935
SAVAGE, HENRY LITTLETON, 622 E. Gravers Lane, Chestnut Hill, Philadelphia, Pa.	1926
SAVAGE, RALPH BUTLER, JR., 934 Bellefonte St., Pittsburgh, Pa.	1936
SAVIN, WILLIAM MORGAN, Annandale, Hunterdon Co., N. J.	1921
SAWYER, MISS DOROTHY MAY, 80 E. Main St., Sidney, N. Y.	1936
SAWYER, EDMUND JOSEPH, Fernow Hall, Cornell Univ., Ithaca, N. Y. (1915-18; 1922-30)	1936
SAXTON, REXFORD NICHOLS, 2141 30th St., N. E., Washington, D. C.	1933
SCHAEFER, HENRY ROBERT, Sargent Road, R. F. D. 2, Hyattsville, Md.	1933
SCHAEFER, OSCAR FREDERICK, 724 Woodbine St., Rochester, N. Y.	1916
SCHANTZ, ORPHEUS MOYER, 3219 Maple Ave., Berwyn, Ill.	1919
SCHEAR, PROF. EDWARD WALDO EMERSON, 107 W. Park St., Westerville, Ohio	1922
SHELL, CHARLES MARTIN, 86 Meadow Lane, New Rochelle, N. Y.	1936
SCHUECK, MISS KATHRYN ALDEN, 4451 Main St., Snyder, N. Y.	1935
SCHINDEL, ROBERT RANDOLPH, 145 Walnut St., Sunbury, Pa.	1932
SCHMID, EDWARD SIDNEY, 712 12th St., N. W., Washington, D. C.	1931
SCHMIDT, EUGENE WILLIAM, 494 Church St., New Britain, Conn.	1927
SCHMIDT, FRANKLIN, Room 2, Soils Bldg., Madison, Wis.	1934
SCHOEDINGER, GEORGE RICHARD, JR., 78 Auburn Ave., Columbus, Ohio	1926
SCHORGER, ARLIE WILLIAM, 168 N. Prospect Ave., Madison, Wis.	1913
SCHRENCK, DR. HERMANN VON, Tower Grove and Flad Aves., St. Louis, Mo.	1919
SCHROEDER, MRS. ADELE PARROTT, 1834 E. 10th St., Indianapolis, Ind.	1920
SCHROEDER, MRS. HENRY WILLIAM, 464 Heights Road, Ridgewood, N. J.	1934

SCHULTZ, MISS HELEN HOUSER, Box 105, S. T. C., Fredericksburg, Va.	1933
SCHWANDT, MISS IRMA M., 1157 Kavanaugh Place, Wauwatosa, Wis.	1934
SCHWARZ, HERBERT FERLANDO, Am. Mus. Nat. Hist., New York, N. Y.	1925
SCHWEITZER, THEO. G., 317 N. 4th St., Hannibal, Mo.	1936
SCOTLAND, DR. MINNIE B., 42 Continental Ave., Cohoes, N. Y.	1936
SCOTT, CHARLES HENRY, JR., 1100 Provident Trust Bldg., Philadelphia, Pa.	1926
SCOTT, DAVID MAXWELL, 279 Briarhill Ave., Toronto, Ont., Can.	1935
SCOTT, F(REDERICK) CLEMENT, 12 Highland Ave., Darien, Conn.	1931
SCOTT, DR. JOHN WILLIAM, University Wyoming, Laramie, Wyo.	1934
SCOTT, OLIVER KENNARD, Central St., Framingham, Mass.	1936
SCOVILLE, SAMUEL, JR., 1307 Penn Bldg., Philadelphia, Pa.	1916
SEARS, J(OSEPH) ALDEN, 742 Cummings Ave., Kenilworth, Ill.	1934
SEDGWICK, JAMES HOWARD, 4800 Prospect Road, Peoria, Ill.	1936
SEFTON, JOSEPH WELLER, JR., 638 F St., San Diego, Calif.	1922
SEIBERT, HENRI CLERET, 414 Northway, Baltimore, Md.	1934
SEIPLE, STANLEY JULIUS, 293 Clinton St., Greenville, Pa.	1927
*SEMPLE, JOHN BONNER, Sewickley, Pa.	1924
*SERPELL, GOLDSBOROUGH, Seaboard Nat. Bank, Norfolk, Va.	1926
SERRILL, WILLIAM JONES, Haverford, Pa.	1916
SHADLE, DR. ALBERT RAY, Biol. Dept., Univ. Buffalo, Buffalo, N. Y.	1928
SHANNON, WAYLAND EVANS, 1260 Talbot St., Jacksonville, Fla.	1929
SHARP, BARTON LAMAR, 201 N. Broad St., Lititz, Pa.	1931
SHARP, DR. WARD M., Valentine Lakes Waterfowl Refuge, Valentine, Nebr.	1936
*SHAW, HENRY SOUTHWORTH, 136 High St., Exeter, N. H.	1916
SHAW, TSEN HWANG, Fan Memorial Inst. of Biology, Peiping, China.	1922
SHAW, DR. WILLIAM THOMAS, 1002 Cambridge Ave., Fresno, Calif.	1908
SHEARER, DR. AMON ROBERT, Mont Belvieu, Chambers Co., Texas. (1893-97)	1905
SHEFFLER, WILLIAM JAMES, 4731 Angeles Vista Blvd., Los Angeles, Calif.	1928
SHELDON, MISS CAROLYN, Mus. Zool., Univ. Mich., Ann Arbor, Mich.	1930
SHELDON, HENRY ERNEST, 21 Norwood Ave., Norwalk, Ohio.	1926
SHELFORD, DR. VICTOR ERNEST, Expt. Zool. Lab., Champaign, Ill.	1931
SHELLEY, LEWIS ORMAN, P. O. Box 22, East Westmoreland, N. H.	1925
SHELTON, A(LFRED) C(OOPER), Suite 1, 234 Mass. Ave., Arlington, Mass.	1935
SHEPPARD, ROY WATSON, 1805 Moulard Ave., Niagara Falls, Ont., Can.	1928
SHERMAN, MISS ALICE E(LIZABETH), 1144 Kenmore Ave., Buffalo, N. Y.	1935
SHERRILL, WILLIAM ENOS, Haskell, Texas.	1922
SHERWOOD, JOHN WILLITS, Route 1, Box 150, Salinas, Calif.	1929
SHERWOOD, ROBERT COVELL, 38 Vassar St., Springfield, Mass.	1921
SHIELDS, THOMAS EDGAR, 150 18th Street, Warwood, Wheeling, W. Va.	1934
SHIPLEY, MISS SYLVIA ANN, The Shipley School, Bryn Mawr, Pa.	1935
SHOEMAKER, CLARENCE RAYMOND, 3116 P. St., Washington, D. C.	1910
SHOEMAKER, HENRY WHARTON, Room 409, 71 Broadway, New York, N. Y.	1912
SHOFFNER, CHARLES PENNYPACKER, Room 25, 725 Walnut St., Philadelphia, Pa.	1915
SHORTT, ANGUS HENRY, Manitoba Museum, Auditorium Bldg., Winnipeg, Man., Can.	1935
SHORTT, TERENCE MICHAEL, Royal Ont. Mus., Toronto 5, Ont., Can.	1931
SHREVE, BENJAMIN, 29 Chestnut St., Salem, Mass.	1933
SHULL, MISS ELIZABETH B., 167 Johnson Hall, 411 W. 116th St., New York, N. Y.	1933

SILLIMAN, OSCAR PERRY, c/o Mitchell-Silliman Co., Salinas, Calif.....	1915
SIMONS, EDWARD ALEXANDER, 4 Lamboll St., Charleston, S. C.....	1928
SIMONS, DR. JOSEPH, 5307 Hyde Park Blvd., Chicago, Ill.....	1929
SIMPSON, THOMAS, 81 Stonewall Place, Memphis, Tenn.....	1936
SKAGGS, MERIT BRYAN, 14755 Coit Rd., Cleveland, Ohio.....	1934
SKILLEN, DR. DONALD RALPH, 317 S. 46th St., Philadelphia, Pa.....	1929
SKINNER, MILTON PHILO, 1316 Harding St., Long Beach, Calif.....	1916
SKUTCH, ALEXANDER FRANK, 3509 Clark's Lane, Baltimore, Md.....	1930
SLADEN, MAJOR ALEXANDER GEORGE LAMBERT, Kingswood House, The Lee, Gt. Missenden, Bucks, England.....	1927
SLAWSON, DR. EDWARD DOUGLASS, 708 N. Sheridan St., Bay City, Mich.....	1921
SLOCUM, HARRY SPENCER, 4 Whitehorn Lane, Bluefield, W. Va.....	1928
SLOCUM, JOHN JERMAIN, 22 Lamboll St., Charleston, S. C.....	1931
SMACH, HENRY HARRY, 1300 S. Euclid Ave., Berwyn, Ill.....	1934
SMALL, COL. WILLIAM MELVILLE, 601 Upland Drive, San Francisco, Calif.....	1924
SMILEY, ALBERT KEITH, JR., Mohonk Lake, Ulster Co., N. Y.....	1928
SMILEY, DANIEL, JR., Mohonk Lake, Ulster Co., N. Y.....	1928
SMITH, MISS ALTA, 2057 7th St., Cuyahoga Falls, Ohio.....	1934
SMITH, AUSTIN PAUL, Zarcero, Costa Rica.....	1911
SMITH, CHARLES PIPER, Rt. 1, Box 24, Saratoga, Calif.....	1929
SMITH, CLARENCE F., Biol. Survey, U. S. Dept. Agr., Washington, D. C.....	1936
SMITH, EARL R., P. O. Box 641, New Orleans, La.....	1924
SMITH, MISS EDITH JOSEPHINE, 1301 Mass. Ave., Apt. 110, Washington, D. C.....	1934
SMITH, MRS. ELIZABETH BURNELL, 1037 N. Stanley Ave., Los Angeles, Calif..	1923
SMITH, MISS EMILY, Route 1, Box 93, Los Gatos, Calif.....	1929
SMITH, PROF. FRANK, 79 Fayette St., Hillsdale, Mich.....	1909
SMITH, FRANK RUSH, 9 Sibley Ave., Hyattsville, Md.....	1926
SMITH, GEORGE SCOTT, c/o M. B. Whyte, R. R. 2, Napanee, Ont., Can.....	1935
SMITH, MRS. HERBERT WATSON, 86 S. Bay Ave., Islip, Suffolk Co., N. Y.....	1925
SMITH, MRS. HERMON DUNLOP, 370 Onwentsia Rd., Lake Forest, Ill.....	1936
**SMITH, HORACE GARDNER, 2918 Lafayette St., Denver, Colo.....	1888
**SMITH, DR. HUGH McCORMICK, 1209 M St., N. W., Washington, D. C.....	1886
SMITH, LESTER WHEADON, 60 Cottage St., Meriden, Conn.....	1916
SMITH, LEWIS MACCUEEN, 26 Benezet St., Chestnut Hill, Philadelphia, Pa.....	1927
SMITH, LORIS PHILBRICK, 2017 108th Ave., Oakland, Calif.....	1931
SMITH, NAPIER, c/o Credite Balear, Palma de Mallorca, Balearic Ids., Spain..	1915
SMITH, REV. O(NNIE) WARREN, 120 Church St., Oconomowoc, Wis.....	1924
SMITH, RONALD WARD, P. O. Box 362, Wolfville, Nova Scotia, Can.....	1932
SMITH, ROWLAND ARTHUR, 211 Dunn Ave., Toronto, Ont., Can.....	1934
SMITH, ROY HARMON, 183 N. Prospect St., Kent, Ohio.....	1922
SMITH, MRS. WALLIS CRAIG, 525 N. Mich. Ave., Saginaw, W. S., Mich.....	1916
SMITH, WENDELL PHILLIPS, Wells River, Vt.....	1919
SMITH, WILLIAM A., Maple Ave., Lyndonville, N. Y.....	1936
SMOOKER, GEORGE DOUGLAS, Mt. Hope, St. Joseph, Trinidad, B. W. I.....	1926
**SMYTH, ELLISON ADGER, JR., Rt. 2, Box 166, Salem, Va.....	1892
SMYTH, J(AMES) ADGER, Salem, Va.....	1933
SMYTH, DR. THOMAS, State Teachers College, Indiana, Pa.....	1921
SNOW, MISS GRACE MARION, 39 Forest St., Winchester, Mass.....	1922
SNOW, MRS. CHESTER, 6805 Brookville Road, Chevy Chase, Md.....	1935
SNYDER, L. H., Chosen Christian College, Seoul, Korea.....	1936

**SNYDER, WILL EDWIN, 309 DeClarke St., Beaver Dam, Wis.....	1895
SOMMER, JOSEPH B., 907 Knoxville St., Peoria, Ill.....	1934
SOUTHAM, HERBERT HUGH, 62 Laing St., Toronto, Ont., Can.....	1936
SPAULDING, MISS NINA GERTRUDE, Jaffrey, N. H.....	1922
SPEIRS, JOHN MURRAY, 17 Wolfrey Ave., Toronto 6, Ont., Can.....	1935
SPELMAN, HENRY MUNSON, 48 Brewster St., Cambridge, Mass..... (1883-99)	1911
SPERRY, CHARLES CARLISLE, 1455 S. Franklin St., Denver, Colo.....	1920
SPIKER, CHARLES JOLLEY, Branchport, N. Y.....	1933
*SPINGARN, EDWARD DAVID WOODBERRY, Amentia, N. Y.....	1924
SPOFFORD, WALTER RICHARDSON, 2d, Highland Road, Berlin, Mass.....	1927
SPROT, GEORGE DOVETON, R. M. D. Cobble Hill, Vancouver Island, B. C., Can.	1923
SPRUANCE, WILLIAM CORBIT, 2507 W. 17th St., Wilmington, Del.....	1923
STAEBLER, ARTHUR EUGENE, Route 5, Box 252, Ann Arbor, Mich.....	1935
STANFORD, DR. JOSEPH SEDLEY, 445 N. 7th St. E., Logan, Utah.....	1929
STANLEY, DR. ARTHUR CAMP, The Farragut, Washington, D. C.....	1925
STARR, DR. FREDERIC ALBERT EVANS, 10 Elm St. E., Sudbury, Ont., Can.....	1935
STARRETT, WILLIAM CHARLES, 303 Maryland Ave., Peoria, Ill.....	1932
STEAGALL, DR. MARY MINERVA, So. Ill. State Teachers College, Carbondale, Ill.	1933
STEBBINS, MISS FANNIE ADELL, 31 Ely Ave., West Springfield, Mass.....	1922
STEELE, RAY CALDWELL, Federal Bldg., Winona, Minn.....	1935
STETSON, SERENO, 511 W. 113th St., New York, N. Y.....	1923
STEVENS, ROSS OLIVER, Soil Conservation Service, High Point, N. C.....	1932
STEVENSON, H(ENRY) BERNARD, Blue Ridge School for Boys, Hendersonville, N. C.....	1930
STEVENSON, HENRY MILLER, JR., 7759 First Avenue S., Birmingham, Ala.....	1933
STEVENSON, JAMES OSBORNE, Wildlife Div., Nat. Park Service, Washington, D. C.....	1926
STEWART, MISS LAURIE MARGUERITE, Hunting Creek, N. C.....	1934
STEWART, PAUL ALVA, R. D. 1, Leetonia, Ohio.....	1928
STILLWELL, JERRY E., 7460 San Benito Way, Dallas, Texas.....	1934
STILLWELL, WENDELL W., 406 E. Vine St., Mt. Vernon, Ohio.....	1935
STINE, MISS PERNA M., State Teachers College, Minot, N. Dak.....	1936
STOCKMANN, STEN, Skeppanegatan 6, Helsingfors, Finland.....	1930
STONE, HARRY HERBERT, JR., Sturbridge, Mass.....	1919
STONE, ROBERT GREGG, 575 Boylston St., Brookline, Mass.....	1922
*STONE, MRS. WITMER, 452 Church Lane, Germantown, Philadelphia, Pa.....	1920
STONER, EMERSON AUSTIN, Box 444, Benicia, Calif.....	1922
STORRER, ROBERT WINTHROP, 322 Vose Ave., South Orange, N. J.....	1935
STORROW, MRS. EDWARD CABOT, Common St., Dedham, Mass.....	1925
STOUT, CLIFFORD RAY, 431 N. Hough St., Barrington, Ill.....	1931
STREIT, RAYMOND E., 50 Broadway, New York, N. Y..... (1921-24)	1929
STRONG, WILLIAM ABNER, 247 Grand Ave., San Jose, Calif.....	1924
STUART, EDWARD TOBEY, JR., 205 Glenn Rd., Ardmore, Pa.....	1925
STUPKA, ARTHUR, Great Smoky Mts. Nat. Park, Gatlinburg, Tenn.....	1934
STUPP, JACK PHELPS, 510 S. Price Road, St. Louis, Mo.....	1934
STURGIS, IRVIN ST. JEAN, R. F. D., c/o Ethel Lyons Van Meter, Higginsville, Mo.	1934
STURGIS, MRS. SAMUEL DAVIS, c/o Col. Julius Cournot, 1616 21st St., Wash- ington, D. C.....	1925
**STURTEVANT, EDWARD, St. George's School, Newport, R. I.....	1896
SULLIVAN, WALTER FRANCIS, 351 Turk St., San Francisco, Calif.....	1924

SUMNER, EUSTACE LOWELL, JR., Box 188, Menlo Park, Calif.	1926
SUTHARD, JAMES GREGORY, Route 1, Madisonville, Ky.	1923
SUTHERLAND, EARL LLOYD, Keuka Park, N. Y.	1935
SVIHLA, ARTHUR, State College, Pullman, Wash.	1925
SWAIN, JOHN MERTON, 15 Pleasant St., Farmington, Maine	1899
SWALES, MRS. BRADSHAW HALL, 2921 Albemarle St., Washington, D. C.	
	(1928-1931) 1932
SWANSON, GUSTAV ADOLPH, Coburn Hall, Univ. Maine, Orono, Maine	1928
SWEDENBORG, ERNIE DAVID, 4905 S. Vincent Ave., Minneapolis, Minn.	1927
SWEET, HERMAN ROYDEN, Biol. Lab., Divinity Ave., Cambridge, Mass.	1933
SWOPE, DR. EUGENE, Roosevelt Bird Sanctuary, Oyster Bay, N. Y.	1921
SYGODA, DAVID FRANK, 232 Beaumont St., Manhattan Beach, Brooklyn, N. Y.	1933
SYPUŁSKI, JOHN LAWRENCE, 823 Warren St., Utica, N. Y.	1934
TABER, WENDELL, 6 Rollins Place, Boston, Mass.	1933
TALBOT, LESTER RAYMOND, 12 Forest Rd., Greenwood, Mass.	1920
TANNER, JAMES TAYLOR, 67 Greenbush St., Cortland, N. Y.	1933
TANNER, OREY, 5019 Constance St., New Orleans, La.	1932
TATNALL, SAMUEL ALSOP, 503 Hansberry St., Philadelphia, Pa.	1916
TAVISTOCK, MARQUIS OF, Warblington House, Havant, Hants, Eng.	1928
TAYLOR, ALEXANDER R., Cayce, S. C.	1907
TAYLOR, EDMUND R., 408 Rosemary Lane, Chapel Hill, N. C.	1933
TAYLOR, HORACE, 294 Walnut St., Brookline, Mass.	1917
TAYLOR, LAURENCE H., 135 Main St., Williamstown, Mass.	1928
TAYLOR, DR. LEWIS WALTER, Poultry Div., Univ. Calif., Berkeley, Calif.	1925
TAYLOR, LIONEL EDWARD, R. R. 1, Saanichton, B. C., Can.	1913
TAYLOR, MRS. LOUIS ROBERTS, 926 East Kilbourn Ave., Milwaukee, Wis.	1935
TAYLOR, OTIS BOYD, 2606 The Plaza, Richmond, Va.	1934
TAYLOR, DR. WALTER PENN, Faculty Exchange, College Station, Tex. (1911-12)	1916
TAYLOR, WARNER, 619 N. Frances St., Madison, Wis.	1916
TEACHENOR, DIX, 1020 W. 61st St., Kansas City, Mo.	1919
TERRES, JOHN KENNETH, Soil Conservation Service, Norwich, N. Y.	1934
TERRILL, LEWIS McIVER, 64 Stanley Ave., St. Lambert, Que., Can.	1907
TERRY, DR. ROBERT JAMES, 5149 Westminster Place, St. Louis, Mo.	1919
TEST, PROF. LOUIS AGASSIZ, 511 Russell St., West Lafayette, Ind.	1929
THABES, MRS. JOHN ALOIS, SR., 417 Holly St., Brainerd, Minn.	1920
THACHER, LOUIS BARTLETT, JR., 192 Hinckley Road, Milton, Mass.	1931
THACKER, THOMAS LINDSAY, Little Mountain, Hope, B. C., Can.	1928
THOMAS, ALLEN MARVIN, Graham School, Hastings on Hudson, N. Y.	1934
THOMAS, EDWARD SINCLAIR, 1116 Madison Ave., Columbus, Ohio	1922
THOMAS, R. M., 298 Gairy St., Winnipeg, Man., Can.	1922
THOMAS, MRS. ROWLAND, Route 4, North Little Rock, Ark.	1935
THOMPSON, JOHN WALCOTT, 527 East First South St., Salt Lake City, Utah	1916
THOMPSON, STUART LOGAN, 286 Wychwood Ave., Toronto, Ont., Can.	1935
THORP, GEORGE BOULTON, Carnegie Inst. Technology, Pittsburgh, Pa.	1935
*THORNE, MRS. WILLIAM VAN SCHOONHOVEN, 810 5th Ave., New York, N. Y.	1925
THORSEN, WALDO D., 387 Moraine Rd., Highland Park, Ill.	1934
THOWLESS, HERBERT LANDO, 255 4th St., Newark, N. J.	1919
TILLISCH, MISS MARY AGNES, 3205 17th Ave. S., Minneapolis, Minn.	1922
TINDALL, CHARLES WALTER, 912 N. Noland St., Independence, Mo.	1919
TINKER, ALMERIN DAVID, 519 Oswego St., Ann Arbor, Mich.	1907

TOLFREE, EDWARD ROGERS, 25 W. 45th St., New York, N. Y.	1921
TOMKINS, IVAN REXFORD, U. S. Engineer Dept., Savannah, Ga.	1928
TOMLIN, DR. FRANCIS HENRY, 2 West Main St., Haddonfield, N. J.	1927
TOMLINSON, IRVING CLINTON, 137 Marlborough St., Boston, Mass.	1920
TONER, GEORGE CLIVE, Gananoque, Ont., Can.	1935
TONKIN, GEORGE, Federal Bldg., Winona, Minn.	1932
*TORREY, DR. HENRY NORTON, 575 Lake Shore Road, Grosse Pointe, Detroit, Mich.	1927
TOUSEY, MISS KATHARINE, 22 Grand View Ave., Somerville, Mass.	1935
TOUT, WILSON, North Platte, Nebr.	1935
TOWNSHEND, HENRY HOTCHKISS, 35 Hillhouse Ave., New Haven, Conn.	1915
TOWNSON, JOHN, 2104 Queen St. E., Toronto, Ont., Can.	1931
TRACY, ERNEST B., Holland Road, Far Hills, N. J.	1936
TRAEGER, JOHN HECKEWELDER, 79 W. Market St., Bethlehem, Pa.	1926
TRAUTMAN, MILTON BERNHARD, Mus. Zool., Univ. Mich., Ann Arbor, Mich.	1924
TREADWAY, JOHN FOWLER, Williams Inn, Williamstown, Mass.	1931
TRIMBLE, MISS RUTH, 309 Eicher Ave., Greensburg, Pa.	1932
TRINE, MRS. GEORGE WASHINGTON, Red Cloud, Nebr.	1935
TROUSLOT, ROLLIN BURDETTE, P. O. Box 373, Walnut Creek, Calif.	1933
TRUESDELL, JOHN FESSENDEN, 6310 Franklin Circle, Hollywood, Calif.	1918
TRUITT, CLARENCE FRANK, 327 N. First St., Yakima, Wash.	1935
TUCKER, BERNARD WILLIAM, 9 Marston Ferry Road, Oxford, England.	1935
TUCKER, CARLL, 733 Park Ave., New York, N. Y.	1929
*TUCKER, MRS. CARLL, 733 Park Ave., New York, N. Y.	1924
TUFTS, ROBIE WILFRID, Wolfville, Nova Scotia, Can.	1919
TURNBULL, JAMES DOUGLAS, 2065 West 48th Ave., Vancouver, B. C.	1927
TURRELL, LORING WATSON, Smithtown Branch, L. I., N. Y.	1927
TURTLE, LANCELOT JAMES, 17-21 Castle Place, Belfast, Ireland.	1928
TUTTLE, HENRY CARLISLE, 50 State St., Boston, Mass.	1930
TUTTLE, HENRY EMERSON, 271 Park St., New Haven, Conn.	1909
TUTTLE, NORRIS, 30 State St., Cambridge, Mass.	1926
TWOMEY, ARTHUR CORNELIUS, Camrose, Alberta, Can.	1930
TYLER, BRUCE PHILIPS, 215 W. Unaka Ave., Johnson City, Tenn.	1934
TYLER, JOHN GRIPPER, 1115 Thorne St., Fresno, Calif.	1912
TYRRELL, WILLIAM BRYANT, 404 Frederick Rd., Catonsville, Md.	1922
UHLER, FRANCIS MOREY, Biol. Survey, Dept. Agr., Washington, D. C.	1924
ULRICH, EDWARD CARL, 275 Mulberry St., Buffalo, N. Y.	1935
*UNDERDOWN, HENRY TENER, 8216 Manor Rd., Elkins Park, Pa.	1921
UNGLISH, WILLIAM ELMER, 345 N. Rosanna St., Gilroy, Calif.	1924
USSHER, RICHARD DAVY, Nancy Lake Farm, R. R. 2, King, Ont., Can.	1931
VAIDEN, M. GORDON, Box 248, Rosedale, Miss.	1936
VALENCOURT, CHARLES WILLIAM, Carleton College, Northfield, Minn.	1936
VALENTINE, MISS MARGUERITE ELSIE, 66 Robinson Ave., Glen Cove, L. I., N. Y.	1933
VAN DEVENTER, WILLIAM CARL, St. Viator College, 211 Main St., Bourbonnais, Ill.	1936
VAN DYKE, REV. TERTIUS, Washington, Conn.	1930
VAN HYNING, DR. THOMPSON, State Museum, Univ. Florida, Gainesville, Fla.	1926
VAN MARLE, JOHANN GOTTLIEB, Beethovenstraat 65, Amsterdam, Holland.	1928
VAN NAME, WILLARD GIBBS, Am. Mus. Nat. Hist., New York, N. Y.	1900
VAN SCHAICK, DR. JOHN, JR., 176 Newbury St., Boston, Mass.	1926

VAN TIENHOVEN, DR. PIETER GERBRAND, c/o Nederlandse Vereeniging tot Bescherming van Vogels, Heerengracht 540, Amsterdam, Holland.....	1928
VARLEY, JAMES ARTHUR, 99 Glencairn Ave., Toronto, Ont., Can.....	1926
VASICEK, JOHN MATTHEW, 10605 Lamontier Ave., Cleveland, Ohio.....	1932
VAUGHAN, WILLIAM COLEMAN, 591 Ashland Ave., Buffalo, N. Y.....	1935
VERGES, EUGENE MARCELIN, 2d, 1126 Beacon St., Brookline, Mass.....	1931
VERWEY, JAN, Zoöl. Station, Den Helder, Holland.....	1928
VETTER, DR. CHARLES, Grand View, Nyack, N. Y.....	1898
VILLALBA, GASTON SANCHEZ, Calle B No. 10, Vedado, Habana, Cuba.....	1934
VOGEL, HOWARD HOLLISTER, JR., Woodmere Court, S., Woodmere, N. Y.....	1935
VORHIES, DR. CHARLES TAYLOR, Univ. Ariz., Tucson, Ariz.....	1918
WADE, JOSEPH SANFORD, Bur. Entomology, Dept. Agric., Washington, D. C.....	1929
WAGNER, MISS ESTHER ELIZABETH, 11 8th Ave., Danbury, Conn.....	1932
WALCOTT, DR. CHARLES FOLSOM, 77 Sparks St., Cambridge, Mass.....	1923
*WALCOTT, HON. FREDERIC COLLIN, Norfolk, Conn..... (1913-15)	1921
WALCOTT, JUDGE ROBERT, 152 Brattle St., Cambridge, Mass.....	1924
WALKER, CHARLES FREDERIC, 53 Latta Ave., Columbus, Ohio.....	1927
WALKER, ERNEST PILLSBURY, Apt. 103, 3016 Tilden St., N. W., Washington, D. C.....	1918
WALKER, ROLAND, Biol. Lab., Rennselaer Poly. Inst., Troy, N. Y.....	1924
WALKINSHAW, DR. LAWRENCE HARVEY, 1421 W. Michigan Ave., Battle Creek, Mich.....	1929
WALLACE, DR. GEORGE JOHN, Fish and Game Service, Dept. of Conservation, Montpelier, Vt.....	1935
WALLACE, ROBERT BROWNE, 3213 Oakland St., Ames, Iowa.....	1935
WALLIS, JOSIAH KENDALL, 132 Holder Hall, Princeton, N. J.....	1926
WALSH, LESTER LEWIS, 294 Bronxville Rd., Bronxville, N. Y.....	1925
WALTER, MISS BERNICE VIOLET, 311 Bedford Park Blvd., New York, N. Y.....	1936
WALTER, DR. HERBERT EUGENE, 67 Oriole Ave., Providence, R. I.....	1901
WALTERS, FRANK, 536 Grand Central Palace, New York, N. Y.....	1902
WANAMAKER, PAUL, 443 Seminole St., Oradell, N. J.....	1930
WANLESS, JOHN, 6 Teraulay St., Toronto 2, Ont., Can.....	1928
WARBURTON, STANTON, JR., 3516 N. 33d St., Tacoma, Wash.....	1928
WARD, FRANK HOWLEY, 18 Grove Place, Rochester, N. Y.....	1908
WARD, HENRY LEVI, 6316 W. Washington Blvd., Wauwatosa, Wis.....	1906
WARFIELD, BENJAMIN BRECKINRIDGE, 402 E. 48th St., New York, N. Y.....	1930
WARMBATH, JULIAN SAMUEL, U. S. National Museum, Washington, D. C.....	1933
WASHBURN, MISS MARIAN, 165 E. Columbia St., Marion, Ohio.....	1936
WATKINS, ALLAN GODFREY, U. S. Forest Service, Saucier, Miss.....	1929
WATSON, ARTHUR TILLEY, 1301 West 10th St., Des Moines, Iowa.....	1929
WATSON, CHARLES GRAY, 201 Ridout St., S., London, Ont., Can.....	1919
WATSON, FRANK GRAHAM, 101 Lockhart Hall, Princeton, N. J.....	1936
WEAVER, CLIFTON STOKES, Va. Military Inst., Lexington, Va.....	1934
WEAVER, RICHARD, 312 Parker St., Toledo, Ohio.....	1936
WEBER, ALOIS JOHN, 904 Grand Ave., Keokuk, Iowa.....	1928
WEBER, JAY ANTHONY, 151 Grand Ave., Leonia, N. J.....	1907
WEBER, ORLANDO FRANKLIN, JR., 22 East 82d St., New York, N. Y.....	1935
WEBER, WALTER ALOIS, 1025 Wade St., Highland Park, Ill.....	1928
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WEED, CLARENCE MOORES, 854 Andover St., Lowell, Mass.	1924
WEEMS, FONTAINE CARRINGTON, 23 Wall St., New York, N. Y.	1931
WEISER, CHARLES SPANGLER, 1901 E. Market St., York, Pa.	1916
WELCH, CECIL MELVIN, Polytechnic Institute, Polytechnic, Mont.	1935
WELLER, MRS. SELDEN, 224 Fulton St., Hempstead, Long Island, N. Y.	1934
*WELLING, YENS M., 1828 East 5th St., R. F. D. 1, Anderson, Ind.	1924
*WELLMAN, REV. GORDON BOIT, 17 Midland Rd., Wellesley, Mass.	1908
WELTER, WILFRED AUGUST, Dept. Sci., State Teachers College, Morehead, Ky.	1930
WENDLE, MRS. JOSEPH, Bowton Lake, Barkerville, B. C., Can.	1927
WETHERBEE, MRS. KENNETH BRACKETT, 11 Dallas St., Worcester, Mass.	1929
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WEYGANDT, DR. CORNELIUS, 6635 Wissahickon Ave., Philadelphia, Pa.	1907
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WHITE, JAMES SAMUEL, 2416 Valley Road, Highland Park, Ill.	1928
WHITMAN, FRANK BURTON, JR., 103 Tyler St., Wollaston, Mass.	1930
WHITNEY, ALVIN GOODNOW, State Mus., Albany, N. Y.	1925
WHITNEY, HOWARD, North Main Street, Southington, Conn.	1921
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WHITTLE, CHARLES LIVY, River Crossroads, Peterborough, N. H.	1916
*WHITTLE, MRS. HELEN GRANGER, River Crossroads, Peterborough, N. H.	1904
WICKS, MRS. JUDSON LANE, 405 Essex Bldg., Minneapolis, Minn.	1922
WIDMANN, BERTHOLD, 4621 Wesley Ave., Los Angeles, Calif.	1936
WIEGMANN, DR. WILLIAM HENRY, 436 E. 5th St., New York, N. Y.	1916
*WIGGLESWORTH, DR. EDWARD, Boston Soc. Nat. Hist., Boston, Mass.	1920
WIGHT, HOWARD MARSHALL, 1417 S. University Ave., Ann Arbor, Mich.	1934
**WILBUR, ADDISON PRENTISS, 60 Gibson St., Canandaigua, N. Y.	1895
WILCOX, LeROY, Speonk, L. I., N. Y.	1927
**WILCOX, THOMAS FERDINAND, Smith Ridge, New Canaan, Conn.	1895
WILDER, GEORGE DURAND, Am. Board Missions, Tehsien, Shantung, China.	1929
WILEY, MISS FARIDA ANNA, Cor. Prospect Ave. & Willow St., Douglaston, L. I., N. Y.	1925
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WILLIAMS, JOHN RAYNESFORD, 801 W. Nevada St., Urbana, Ill.	1936
WILLIAMS, LAIDLAW ONDERDONK, P. O. Box 453, Carmel, Calif.	1919
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WINEMAN, ANDREW, 150 Michigan Ave., Detroit, Mich.	1932
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WING, LEONARD WILLIAM, 1532 University Ave., Madison, Wis.	1929
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WOOD, MERRILL, Zool. Dept., Penn. State College, State College, Pa.	1927
WOOD, MRS. WILLIAM L., Long Beach, Wash.	1935
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WOODLETON, MRS. HELEN SAUNDERS, 454 Seventh St., Brooklyn, N. Y.	1933
WOODRING, GEORGE B., Am. Nat. Bank, Hillsboro Br., Nashville, Tenn.	1935
WOODS, HARRY EARLE, P. O. Box 216, Huntington, Mass.	1924
*WOODS, ROBERT S., Box 356, Azusa, Los Angeles Co., Calif.	1926
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WOOLMAN, MISS ANNA, 21 N. Highland Ave., Lansdowne, Pa.	1920
WOOLMAN, EDWARD, Panmure Rd., Haverford, Pa.	1925
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WORK, MRS. ROBERT, Bosky Acres, Barrington, Ill.	1934
WORKMAN, WILLIAM HUGHES, Lismore, Windsor Ave., Belfast, Ireland.	1928
WORTH, DR. C(HARLES) BROOKE, 602 W. Elm Ave., Swarthmore, Pa.	1927
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WRIGHT, WILLIAM BURRITT, 22 7th Ave., Haddon Heights, N. J.	1936
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WYCKOFF, NATHANIEL CAIN, Millstone, N. J.	1935
WYTTE, MISS MARGARET WILHELMINA, Mus. Vert. Zool., Univ. Calif., Berkeley, Calif.	1924
*YAMASHINA, MARQUIS YOSHIMARO, 49 Nanpeidai, Shibuya-machi, near Tokyo, Japan	1927
YEARLEY, CHURCH, Alpha Delta Phi Frat., 136 W. 44th St., New York, N. Y.	1935
YEARY, JOHN CY., c/o King Ranch, Kingsville, Texas	1932
YEATLER, RALPH EMERSON, Ill. State Nat. Hist. Survey, Urbana, Ill.	1926
YODER, WILLIAM HENRY, JR., 859 Granite St., Philadelphia, Pa.	1923
YOUNG, ARTHUR FRANKLIN, 254 Keeth Road East, North Vancouver, B. C., Can.	1931
YOUNG, CHARLES HENRY, Nat. Mus. Canada, Ottawa, Ont., Can.	1931
YOUNG, JOHN PAUL, 205 Devon Rd., Ithaca, N. Y.	1911
ZAHNISER, HOWARD, 3220 Conn. Ave., N. W., Washington, D. C.	1935
ZAMBRA, GR. UFF. RAG. VITTORIO, Corso Umberto I, 49, Rome, Italy	1928
ZEISS, HENRY M., 1194 Westmoor Road, Winnetka, Ill.	1936
ZELENY, LAWRENCE, 613 East River Road, Minneapolis, Minn.	1924
ZIMMERMAN, FRED. ROBERT, Central Wis. Game Project, Site II, Black River Falls, Wis.	1936
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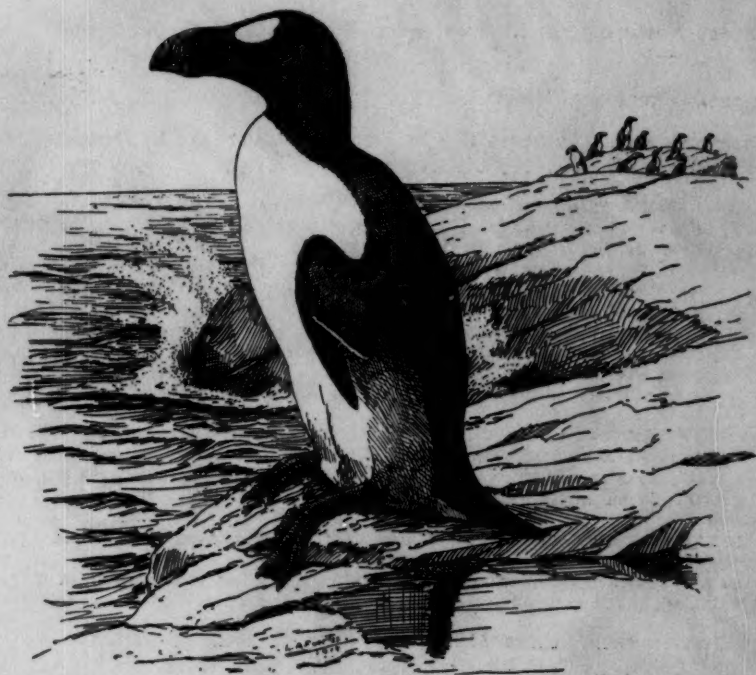
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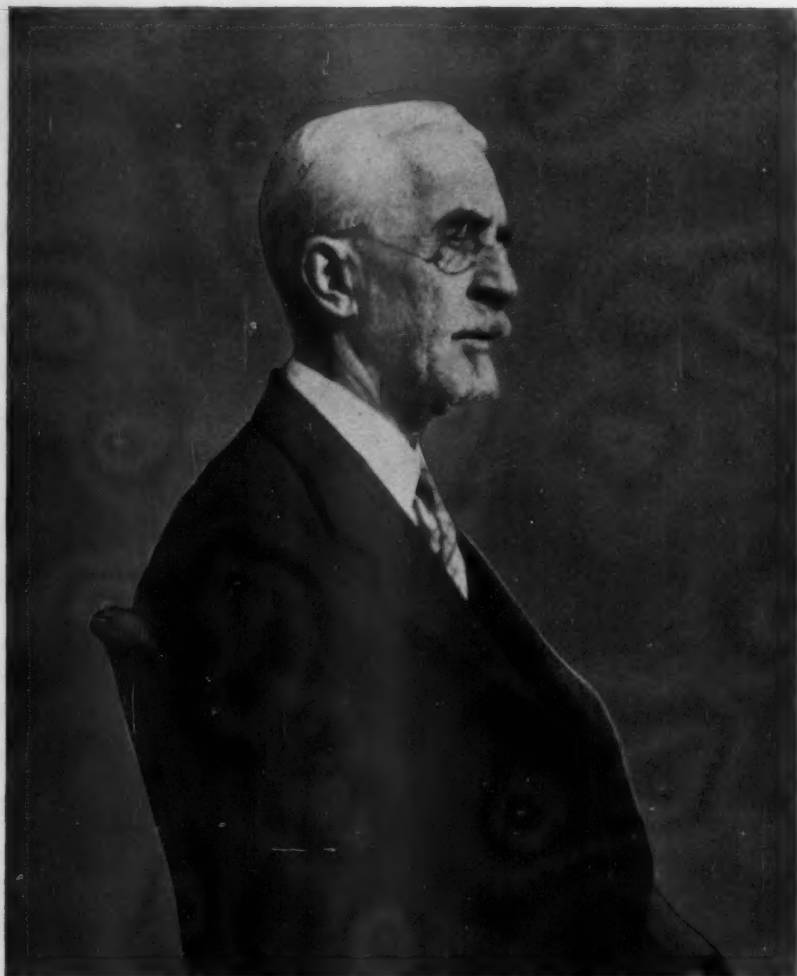
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CONTENTS

IN MEMORIAM: WILLIAM HARRY BERGTOLD. By <i>A. K. Fisher</i> . (Plate 1) . . .	1
BIRDS OF THE BOWDOIN-MACMILLAN ARCTIC EXPEDITION, 1934. By <i>Alfred O. Gross</i> . (Plates 2-5)	12
A CYCLE IN NORTHERN SHRIKE EMIGRATIONS. By <i>David E. Davis</i>	43
PARASITES OF THE EUROPEAN STARLING IN ILLINOIS. By <i>Joseph B. Sommer</i> . .	50
AVIAN HABITATS IN THE THORN-BUSH AREAS OF NATAL. By <i>Raymond B. Cowles</i>	54
SOME ARIZONA BIRD STUDIES. By <i>Herbert Brandt</i>	62
FURTHER NOTES ON THE NESTING OF THE BARN SWALLOW. By <i>Wendell P. Smith</i>	65
EUROPEAN DUNLINS IN NORTH AMERICA. By <i>Ludlow Griacom</i>	70
MIGRATIONS OF THE AMERICAN BRANT (<i>Branta bernicla hrota</i>). By <i>Harrison F. Lewis</i>	73
GENERAL NOTES.—How far can a bird see?, 96; Hallstorms and avian mortality, 97; Notes from northern Idaho, 97; A colony of Western Grebes, 98; Albino Pied-billed Grebe in Wisconsin, 98; Flamingo seen in Florida, 99; The Flamingo in the Florida Keys, 99; Behavior of a Blue-winged Teal, 99; Golden Eagle in Illinois, 100; Duck Hawk and Sparrow Hawk on the Tortugas, 100; Black Rail breeding in Indiana, 100; Franklin's Gull in Ontario, 101; Sabine's Gull on Long Island, 101; Arctic Three-toed Woodpecker on Long Island, 102; New records for Spanish Honduras, 102; Willow Thrush in the Magdalen Islands, 102; Early nesting of the Cape Sable Seaside Sparrow, 102; Lincoln's Sparrow nesting in Maine, 102; Measurement of growth in the Eastern Chipping Sparrow, 103.	
RECENT LITERATURE.—Mayaud's 'Catalogue of the birds of France,' 105; Fuertes and Osgood's 'Artist and Naturalist in Ethiopia,' 105; Thomson's 'Bird Migration,' 106; Nicholson and Koch on 'Songs of Wild Birds,' 106; Brand's 'More Bird Songs,' 107; Weiss on Rafinesque, 107; Periodical literature, 107.	
CORRESPONDENCE.—"Mating" and "Coitus," 114; Local bird names wanted, 114.	
NOTES AND NEWS.—Dr. Stone's resignation, 115; Need of an endowment fund for 'The Auk'; Ninth International Ornithological Congress, 115.	
THE FIFTY-FOURTH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION. By <i>T. S. Palmer</i>	117



Yours
W. B. Bristold



THE AUK

A QUARTERLY JOURNAL OF ORNITHOLOGY

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No. 1

IN MEMORIAM: WILLIAM HARRY BERGTOLD¹

Born October 28, 1865—died March 19, 1936

BY ALBERT KENRICK FISHER

Plate 1

THOSE who have the desire, and are blessed with the opportunity, find Nature an overflowing spring that pours forth innumerable things of absorbing interest which give zest to life and inspiration for thought. Where a man's business also is a hobby, he is doubly blessed, because the trials of life are more easily carried with a mind at ease. All this was brought vividly to mind, when over fifty years ago at the founding of our Union, the writer was thrown among a group whom we might consider the close followers of the American pioneer ornithologists. In the informal talks among members when at ease between the organizing sessions, were heard interesting tales of their experiences and of their meetings with the still earlier ornithologists, with comment regarding their impressions of some of the more noted ones. As one of the younger founders all this was listened to with almost awed attention, and duly absorbed for future delectation. Almost immediately after the close of the A. O. U. session, its committees on migration and on the English Sparrow began collecting material. Through correspondence and advertisements in various periodicals, bird lovers were requested to coöperate by sending data relating to these two subjects in areas familiar to them. Many of the now prominent ornithologists stepped into the breach and started on the upward trend. As a district leader to receive communications, I came in contact through correspondence with many a pleasing personality who later developed into a lifelong friend. In this way I became acquainted with the subject of this paper, William Harry Bergtold, whose death on March 19, 1936, took from us a valuable

¹ Read before the American Ornithologists' Union, at Pittsburgh, Oct. 21, 1936.

The portrait accompanying this paper is from a photograph taken by Mrs. Bergtold, October, 1934.

and talented fellow member. Our close and endearing friendship commenced with correspondence relating to his migration reports sent from Buffalo, New York. In the archives of the Biological Survey we find his commendable reports dating back to 1886 on migration, breeding, and distribution of birds and the status of the English Sparrow as relating to western New York.

Our correspondence, as it went on, included more and more personal matter, so that when we later met in Denver, we had the easy feeling of being acquainted. As time passed, our friendship deepened, so that the yearly visit to Denver was looked forward to by both of us with keen anticipation. The visitor was dined, taken on automobile rides into the country to see birds, and entertained in long talks on subjects of mutual interest. Ornithology and related biological subjects and medicine, especially as it relates to the normal function of the body, were our important hobbies. As I had had intense physiological training under the renowned physiologist, John C. Dalton, I was in position to discuss rationally various points with my friend. Psychology, the intangible mystery, also was approached on occasions. We also discussed Nature's methods of solving problems, but always hesitated to criticize, knowing full well that we were seeing a few moments only of the million years in which she was framing the destinies of our world.

Through the kindness of his widow and daughter, I have had the privilege and good fortune to examine his autobiography, which he prepared especially for his daughter and two granddaughters. It is a document of two hundred typewritten pages and it should be published to give people an opportunity to read the details of an interesting life that went forward regardless of obstacles. The way his autobiography shows how nicely obstacles may be overcome and good things secured through effort when for the moment they appear hopeless, should be a stimulating example for youth to follow toward an enviable future. It always was a real satisfaction to the Doctor to reflect that no spell of religious fervor influenced his emotions and during emotionally unstable times, he was always able to keep his feet firmly on the ground. I have drawn on the autobiography for considerable material for the present paper.

The Bergtolds came originally from Bern, Switzerland. A direct ancestor settled at Groutweiller, Alsace, France, and his son, Jacob, was Doctor Bergtold's great-great-grandfather. A grandfather came to Buffalo, New York, about 1830, and the father was born there on May 28, 1835. During the Civil War he served in the Army of the Potomac and as first-lieutenant was honorably discharged at the end of two years' service.

His mother was one of those fine personalities whose greatest pleasure is in assisting their children's advancement. She gave him among other things

the greatest encouragement in the study of birds, flowers, and trees, and she was happy when she found that natural history was more than a passing hobby and was becoming a life study.

In his boyhood days, a big Newfoundland dog (a breed now seldom seen) was his constant companion, entering into sports with as much joy and zeal as his master. He strongly advised that, when possible, every boy should have a dog and thus experience the pleasure of having an uncomplaining companion and true friend. Living in a region of well-marked seasons, Bergtold and his associates had grand times in the summer, boating and swimming; and in winter, skating, playing shinney, and bob-sleighbing, a combination of exercise that develops strength and endurance in the coming man or woman. When about fifteen years old, Bergtold became very much engrossed in the study of electricity. Across the street a chum, equally interested, with him put up a telegraph line between their houses, and both soon became fairly good operators. This line from time to time was extended to the homes of other interested boys and finally reached a total length of fifteen miles. In later years some of them became commercial operators, and two finally rose to high positions in a large company. From this experience, Bergtold was able to send messages until the close of his career, but in later years he was unable to translate by the sound of the incoming messages. About the same time the two chums went into photography with wet plates.

He spent the summer of 1883 in Leadville, Colorado, and made frequent trips to the surrounding mountains to study alpine plants and birds. In October he returned to Buffalo and on the 21st entered the medical department of the University of Buffalo, the youngest member of the class. Although this medical school may have lacked some prestige as compared with some larger, better-known ones, it nevertheless produced such men as Dalton in physiology, the elder Flint in medicine, Withans in chemistry, Mann in gynecology, and Roswill Park in surgery. Bergtold made good in using this school as the basis of his life work, as he rose high in bacteriology and other branches of his profession and eventually became a prominent diagnostician. On my numerous western trips I often heard him spoken of as having been called in consultation in special and obscure cases far away from Denver.

His teacher in biology in high school was Charles Linden, who guided his studies in the right direction and became a loyal friend. Linden was a German whose real name was Karl Pfitzner and who early in life ran away to sea and spent years as a sailor before the mast. His name was so confusing that he very soon changed it to Linden. His knowledge and interest in natural history finally led him to Buffalo as a teacher. He was founder and leader of the Buffalo Naturalists' Field Club, which was active for a long period and whose field excursions gave members and high-school

scholars a fine opportunity to study the local fauna, flora, and geology. These trips led to a warm and lasting friendship between Linden and Bergtold. Linden taught the young man how to skin and mount birds and took him often on special trips. Linden was an associate member of the A. O. U. and insisted that Bergtold join, which he did in 1889.

During vacation time in July 1884, he and a young friend went as guests of Mr. Linden to Cape Henry, Virginia, on a collecting trip. They stayed with the lighthouse keeper, as at that time there were no settlements within eight miles of the lighthouse. The month spent in this wild region was most enjoyable, and much of the time was devoted to shooting and skinning birds for Mr. Linden, who was studying the plumage changes of young gulls and terns. Surf bathing and visiting fishermen's shanties, where wonderful sea-food meals were served, were among the joys of the trip, and the period spent at Cape Henry was numbered among the most enjoyable events of his life. It put him in fine physical condition for the hard work of the coming winter and gave him a broader view of life.

In February 1886, he was graduated from the medical department of the Buffalo University. It was a huge satisfaction to him to be graduated at the head of his class, some of the forty-four members of which were more than double his age. He spent eighteen months in Buffalo General Hospital as intern, leaving on August 31, 1887. In 1888, when he took up pathological work in the laboratory of the College of Physicians and Surgeons, New York, he was with Dr. Prudden, a man under whom I had worked ten years earlier. After Bergtold had been in this laboratory about a month, he was made unofficial assistant in histology. While in New York, along the line of recreation beside the theatre, opera, and baseball, Bergtold began and nearly completed his "List of the Birds of Buffalo and Vicinity." The years 1891 and 1892 were busy times in his medical life, and maybe overworked him physically, for in the spring of 1893 his health was below par and an examination found tubercular bacilli to be the cause. Through the advice of his older colleagues, he went in October to Saranac Lake in the Adirondacks with Dr. Edward Trudeau. As there was little improvement in his physical condition during the next six months, he left Saranac in May 1894, and within a short time went to Denver to live and get well. This move was a fortunate one, for in about eighteen months, he wholly recovered his physical strength and was able to enter actively into professional work.

On June 20, 1898, he married Adele Darling Smith, who was born in New York City on June 5, 1868. She was the daughter of James Baker Smith, an architect and builder, who among other things did considerable construction work for the British Government on the Bermuda Islands. Two daughters were born to the Bergtolds. The elder died shortly after

birth; the younger, Louise Harriet, was his great joy, and as she developed into girlhood, became his constant companion in outdoor rambles. Her love for nature made it a recreation for him to teach her the birds and plants of Colorado.

His interest in birds began many years ago; in fact, over half a century has passed since he was electrified for the first time by the sight of a brilliantly colored bird. His first ornithological experience, which duly thrilled him, was watching a Robin in a maple tree near his window, building and shaping its nest. This avocation proved to be a perennial delight and an unbroken source of recreation. When he was about ten years old, one of his companions, somewhat his senior, frequently took him into the woods, where he shot Ruffed Grouse, Woodcock, rabbits, and occasionally a fox. On one of these hunting trips, he found a dead Blue Jay, its beautiful color amazing him so much that he took it home to his mother, who was fully as charmed as he over its lovely blue, white and gray plumage. That Blue Jay fixed the study of birds as one of his greatest and most absorbing avocations. It would seem that cases are not rare where a certain bird at an opportune time has acted as a spark in the youthful mind, to kindle the flame of interest in ornithology. In my experience a Kentucky Warbler was the guilty party that pushed me onward and upward.

When Bergtold moved to a new home on Delaware Avenue in 1877, an opportunity was given him to see more of bird life and nature in general, which he accepted with alacrity. The ten-acre yard was supplied with a well-apportioned assortment of fruit and shade trees, as were those of the other suburban neighborhoods, which furnished a wonderful rendezvous for nesting and migratory birds. This was the more enjoyable and fascinating because his good mother shared his enthusiasm in each newly found bird. Very early in this period, his father gave him Studer's book on North American birds, its chief value being that it was illustrated with colored pictures of all the birds of the eastern United States. It, together with diligent field observations, soon made him familiar with all the common birds of western New York. His progress would not have been so rapid had he not about this time learned to prepare and "make" a bird skin. It now became more and more apparent that his bird work was not a passing fancy, so his father gave him a single-barrel breech-loading shotgun with which to start making a collection of local avifauna. With the aid and encouragement of his friend and teacher, Charles Linden, he became established as an amateur ornithologist. In December 1883, Linden insisted on his becoming a member of the Buffalo Naturalists' Field Club, which brought him into a zoological and botanical atmosphere and stimulated the feeling he always had toward Nature. By 1888 he had accumulated enough data of his own and of friends to compile and write his first extensive bird

paper, "The Birds of Buffalo and Vicinity," the first list of birds of this region ever published. It was gotten out as one of the Field Club's Bulletins and also as a separate. It now is very rare and hard to obtain, even from second-hand dealers. Other papers were written to be read before the Field Club, the first being one on the English Sparrow, read in October 1887. In time he became better known and was requested to give talks to local groups of people on the birds of the region.

He became an associate member of the American Ornithologists' Union in 1889 and was raised to the rank of Member in 1913, and in 1921 to the grade of Fellow, the last being in his estimation one of the highest of any honors within his reach. He believed that this last distinction was conferred on account of his work, "The Incubation Period of Birds," a résumé of which was read at the Philadelphia meeting of the A. O. U. in 1916; the book was published a year later. The Philadelphia meeting was the first one he was able to attend, and that in Washington in 1927 was the last.

In 1896 when it became known locally that he had settled in Denver, several Colorado ornithologists called on him and made him feel welcome to their ranks as a student of Colorado birds. His first contribution to Colorado ornithology was a small list of birds recorded by him in the State since his recent arrival, and later it was incorporated in Cooke's list of Colorado birds. In January 1899, chiefly through the initiative of A. H. Felger, a group of Denver bird lovers organized the Colorado Ornithological Association, holding its first meeting at Mr. Felger's home. For some years this association met regularly in Bergtold's office on Fourteenth Street and he served as its president for two or three years.

People who really have something of importance to do often are bothered and delayed by those who feel their nonsensical dilly-dallying should be attended to first. Doctor Bergtold met a case of this kind in a proper manner. A women's club asked him to give a lecture on Colorado birds at one of its meetings. To do this he had to skip his afternoon office hours and was careful to be on time at the Club. This, however, availed nothing, for these women held a long business session, over which they had an interminable wrangle before they were ready for his talk. He had waited more than an hour beyond the appointed time and his patience was exhausted, so when the chair-woman finally introduced him to the meeting, he arose and begged leave to be excused because he had set aside a definite period of time for this talk, a period long since passed, and he then had duties elsewhere, and bowed himself out. He never heard anything of this incident afterward.

The years of a beginning and developing medical practice as in Bergtold's case always are fully occupied, so that he was able to spend little time in the field to observe birds and collect original data. This, however, did not

dampen his ardor and zest for ornithology which was carried along other lines in his study at home. One way in which this was done was to make a study of birds presented through Shakespeare's eyes. Every available bit of his writings was carefully read in search for references to birds and their habits. This material was extensive, and on it he wrote a paper called "Shakespeare's Birds," given as an address at the University of Denver. A few years later he learned that J. E. Harting had written similarly and he was glad to have the volume in his library.

His ornithological activities brought to him many pleasant associations and friendships, and his memberships in the A. O. U. and Bird-Lore Council gave him many enjoyable hours with members of the different classes. During the annual dinner held in 1916 at the Philadelphia meeting, Dr. Chapman in a talk to the gathering, reminisced over his friends who were at the banquet. As he went mentally around the table, he related many very interesting things which had occurred with these friends. When he got to the Doctor, he said, "And I see my friend Doctor Bergtold of Denver, who published the first list of the birds of western New York, who launched me on my mountain experience when I was in Colorado by sending me to Estes Park, and gave me my first automobile ride." Bergtold thought it was great that a New Yorker had to go to Denver for his first ride in an automobile.

It may be of interest, especially to those who are historically inclined, to know that Bergtold had his first ride in a "steamer" or locomobile, as it was called, in December 1900. We little dreamt at that time that this new invention would develop so rapidly into a powerful machine that in thirty-five years would change the topography and many social and economic conditions of the country, would kill and maim more people each year than did the World War, and would destroy many of the charms of Nature.

In 1917 there was an invasion of innumerable flocks of Bohemian Waxwings, especially in the West. Bergtold was able to trap a goodly number to be sent to the aviary of Bronx Park and to collect specimens for friends. His first regional report relating to Denver birds appeared in Bird-Lore in August 1917, and except on one occasion, a report was sent and published in every issue of that magazine for a long period of time. These regional reports put him in touch with many pleasant people throughout the State, people interested in birds, who generously sent in notes on the birds of their several areas, helping to make the reports both valuable and interesting. He was pleased to find that some of his contributions to ornithology were used far more than he expected, and his annotated list of the Birds of Denver (1918) was recommended for use in the schools of Denver. He had learned from friends that his work on incubation of birds was a most useful book and had made for him a national reputation. The one important and

original idea embodied in his incubation study regarding the factor determining the length of incubation, never has been disputed, though a considerable period has elapsed since the issuance of the book.

One of his great regrets was his inability to attend regularly the A. O. U. meetings. He attended only three of these annual meetings since 1889. After the close of his third meeting (1927), he remembered with real satisfaction the meeting with Gregory Mathews, who stopped off at Denver to call on him, as he was headed for New York and his home in England. He thought him a delightful companion on their brief auto trip into the country to see birds, a feeling shared by many of us.

In 1923, he gave his bird collection to the museum of the University of Colorado, where it now rests and where it will be available to students. He induced his friend Dr. Leonard Freeman to give his fine collection of birds gathered years ago in and about Cincinnati to the same institution. Their two collections added materially to the Museum collection that was in need of specimens of eastern birds.

Ornithologists at times have amusing experiences which are worth recording. During Bergtold's first trip to Old Mexico (1903) his guide was an illiterate American who lived in El Paso, wandering about Old Mexico and New Mexico, making a precarious living in guiding and doing odd jobs. He soon learned of the Doctor's interest in birds and one day after they were well in the Sierra Madre, asked him, "Did you ever see or get a 'peteralis'?" He had the Doctor guessing, for what he meant by "peteralis" was difficult to solve. By careful cross-examination it came out that this peculiar thing was a large black and white bird with a big white bill and a red head-spot, very obviously a woodpecker. One noon while they were in camp, Bergtold heard a loud call exactly like the spoken word "mamma." The guide also heard it and shouted, "That's it!" After a careful stalk, the bird was shot, and it proved to be an Imperial Woodpecker, the largest of its tribe in the world. But the guide's name of the creature was still a mystery. Later conversations with him brought out the fact that he previously had been employed by two professional ornithologists on a trip into Old Mexico, and according to his understanding that was the name they gave to the bird. Then it flashed into Bergtold's mind that the bird's scientific name, *Campephilus imperialis*, which the guide recalled as it was repeated to him, was the basis of his "peteralis."

In 1905, Bergtold began to gather material for a textbook on the birds of Colorado, hoping to have it in print within a few years, but the exigencies of a physician's life and more pressing work, delayed it from year to year until the summer of 1928, when the book appeared as "A Guide to the Birds of Colorado." He received some gratifying letters about it from ornithologists both within and without the State. With the publication of

this book, he had finished every planned work on ornithology except one, a piece of research, which concerns the origin of birds so far as the group phylogeny goes. The way he had in mind of attacking this problem never had been considered by anyone so far as he knew. It would be highly original work, take lots of time to plan and complete the study. It is understood that he planned to leave an outline of it among his papers which could be turned over to some competent worker in ornithology to study.

I often have heard him raise the question of the value of an avocation. He felt that it is fair to ask of what use it has been to spend so much time over an avocation. Putting aside all questions of pleasure and outdoor benefits, which are of no mean consideration, he believed he truthfully could say that his ornithological activities helped the growth and keenness of his powers of observation as nothing else could have done in so marked a degree. Nothing is more useful in medicine than a combination of swift, sharp, and accurate observation and logical deduction therefrom, and bird work promotes and accentuates all these, making one in every way a better clinician.

Although birds always were his chief zoological interest, mammals from the standpoint of a sportsman were eagerly sought when an opportunity to go afield presented itself. His first real hunting was in the Nippissing region of Canada in 1889, before he left Buffalo. Here when he was unsuccessful in securing game, he at least learned a lot about wood- and canoe-craft from the Indians, which made the outing a satisfactory one. The first autumn after he arrived in Denver, he went with acquaintances to Routt County, Colorado, where he spent three months in hunting and attempting to build up his physical strength. Here there were plenty of deer and antelope for sport, but strenuous exercise at this altitude did not improve his health. In this region where they were camping, they ran across Walahan, who was one of the first, if not the first, to photograph big game in America. He went about his photography quietly and as he did little or no advertising, his pioneer work was unknown outside of Colorado. I have seen a number of his photographs, which even at this day would be considered excellent. A perfect photograph of a mountain lion, taken in mid-air, as it jumped from a tree, is as fine as could be wished for.

On various hunting trips to the mountains when horses were used for both riding and carrying the outfit, Bergtold took interest in and became familiar with packing methods. He soon learned to use swing packs, to throw the two- or one-man 'diamond hitch,' the squaw hitch, and the bed pack. Those who have gone through similar experiences well know the contented feeling he must have had carrying a knowledge without which the pack always was a continual worry. When game became scarce in Colorado or

when there was a desire to see other game regions, he made trips to Montana, New Mexico, Arizona, and Old Mexico. In all these places he enjoyed the Indians, ruins, and whatever of interest came to view, as much as he did the game hunting, the major project. He was a good shot, so that the average camp was rarely without meat. He had a fondness for both shotgun and rifle, but cared little for the fishing-rod except to secure food that was to his liking. Doctor Bergtold was very handy with tools and was able to make almost anything he desired. The first radio I ever listened to, was made by him. We listened at his home in Denver to a fine music broadcast from Salt Lake City, and the instrument was as clear as any I have since heard.

It was very natural that Bergtold should have taken interest in military affairs, since both his father and grandfather were officers in military organizations. He was a commissioned officer for more than sixteen years and thoroughly enjoyed the experiences, even though some were very trying. Before he left Buffalo for Denver, he held a commission as assistant surgeon of the 74th regiment of the National Guards of New York, and served from May 21, 1890, to June 24, 1894, when he resigned to go West. In the World War early in 1918, Bergtold was asked if he would prefer to be commanding officer or Chief of the Medical Service in the new army hospital for tubercular patients, then to be constructed at Aurora, Colorado. It was the largest hospital for tuberculars in the world, and was called the U. S. General Hospital No. 21. He very wisely chose to be Chief of the Medical Service, for it carried with it great opportunities for clinical, bacterial, and other lines of familiar work. He was appointed Major in the Medical Corps September 13, when he stopped private work and spent all his time at the growing hospital. The building, establishing, and managing of this huge hospital was a colossal task. The first patient was admitted in October 1918, before a single room in the hospital was completed. In 1919, six months later, the institution housed seventeen hundred patients. Bergtold, as director of the medical side, knowing by experience that men will stand for almost anything except empty stomachs or poor food, made supreme effort to have the kitchen function properly.

During the War Bergtold took no real vacation, but for a change and rest he would spend a week in a cottage in the hills, staying alone, but had many birds, mammals, and books as companions. These cottage trips were interspersed with motor trips to Berthoud Pass, where camp would be made at the edge of snow at timberline for a few days or a week. Here boreal plants and such birds as Rosy Finches and Ptarmigans gave a variety of no small note and greater zest to the combined experiences.

In July 1919, about a month after leaving active service, he was made commissioned Lieutenant Colonel in the Officers' Reserve Corps and in 1925 was advanced to full colonelcy. I used to joke with him by saying

that when his voice was tense while talking over the telephone, he should be addressed as Colonel, but when it was of milder tone, the term Doctor would be more appropriate. This always would bring a laugh from him. As many of our experiences through life from early childhood were very similar, our likes and dislikes much the same, and our contempt for hypocrisy and unreality of life mutual, we were given plenty to discuss and entertain one another with through our correspondence or when good fortune brought us together. As time went on our friendship deepened, and now that he has gone beyond, I know from my own feelings what the loss of his presence must mean to many others.

BIRDS OF THE BOWDOIN-MACMILLAN ARCTIC EXPEDITION
1934

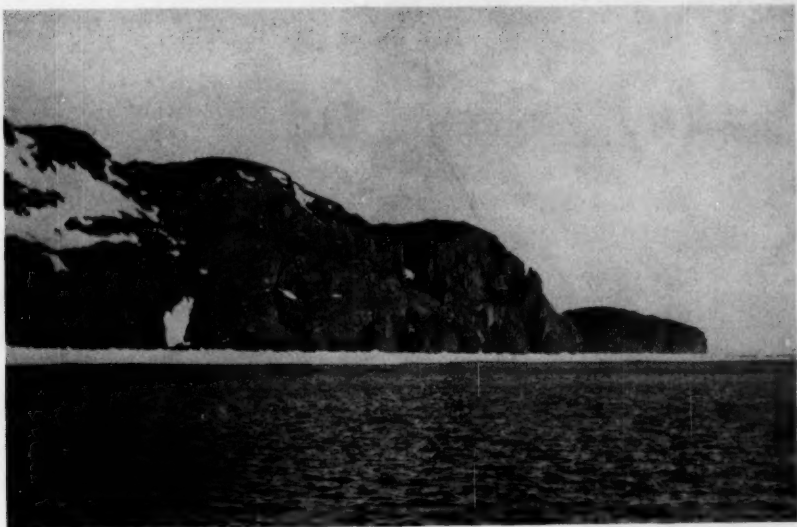
BY ALFRED O. GROSS

Plates 2-5

THE Bowdoin-MacMillan Arctic Expedition of 1934 was for the purpose of studying and collecting birds and plants on the coast of Labrador and the Button Islands. The latter lie between Gray and Hudson Bay Straits off the northern end of the Labrador peninsula. They were discovered by Sir Thomas Button as early as 1614 but as far as I know no biological survey had been made of them previous to the present expedition. Certain birds such as Fulmars and Kittiwakes were known to be very abundant about the islands but their nesting sites were unknown in that vicinity. It had been suggested that they probably bred on the cliffs of the Buttons but what life existed on those bleak and inhospitable islands was merely conjectural. Landing on the Button Islands is extremely difficult because of the strong tides and currents, the impenetrable ice packs as well as dense fogs and treacherous storms which prevail off Cape Chidley, the "Cape Horn" of the North.

Commander Donald B. MacMillan, famous Arctic explorer and alumnus of Bowdoin College, said he could land a party on the islands. His staunch eighty-eight-foot schooner, the "Bowdoin," was made ready for the expedition. Seven Bowdoin students volunteered their services to assist in the biological work and to aid in the navigation of the vessel under MacMillan's command. Dr. David Potter, professor of botany at Clark University, and two of his students joined us with the purpose of making collections of plants of the Labrador coast. With these major objectives the "Bowdoin" sailed from Portland, Maine, on June 16, 1934, with a personnel of fifteen men including Captain MacMillan, a first mate, an engineer, and a cook.

In this paper I propose to give a brief account of the birds collected and observed from the Gulf of Saint Lawrence northward and to include certain observations of interest made along the coasts of Nova Scotia and Cape Breton Island. About forty species of birds were observed during our stay at Cape Breton Island, but since the bird life of this region is well known, these have not been included in the present account. In connection with the lists of skins, the total length and wing-extent in millimeters and the weights in grams are given in most instances since these measurements, which are very useful in life-history studies, cannot be obtained from dried skins. There is a serious lack of data concerning the weights of birds in ornithological literature.

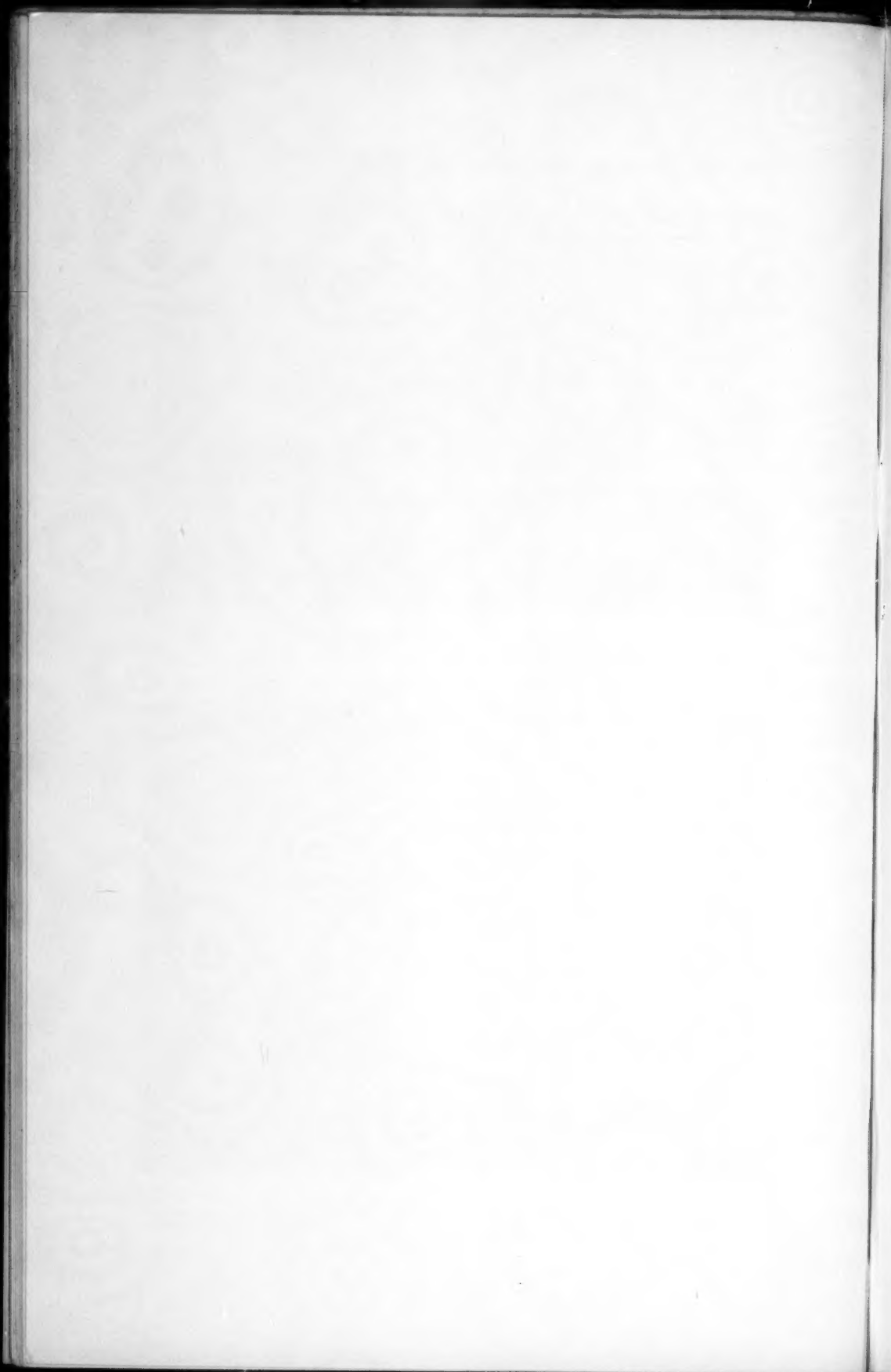


CAPE CHIDLEY ON A QUIET CLEAR DAY



THE BUTTON ISLANDS; AIRPLANE VIEW TAKEN BY THE FORBES EXPEDITION;
LACY ISLAND IN THE FOREGROUND





Notes on food and habits of the birds are included whenever such information was obtained. The crowded quarters of the "Bowdoin" and the general lack of facilities prevented us from making extensive collections but we succeeded in obtaining approximately 250 skins which are now in the Bowdoin College collection. Ninety-three species and subspecies of birds were collected or observed, but comparatively few land birds are included since our observations were limited to the coast, chiefly of the outer islands. Because of the great distances to be traveled, most of the stops were of necessity of short duration. This prevented making an adequate survey of the bird life, much less any attempt at complete life-history studies. Much time was consumed in sailing and in weathering-out storms, experiences not always enjoyable to one subject to violent seasickness. In addition to collecting we took every opportunity to band birds. A special effort was made to band large numbers of Arctic Terns at their colonies in the vicinity of Turnavik and the Red Islands, since previous work on this species has yielded very interesting and important information concerning their migratory movements. About six hundred photographs and five thousand feet of standard 35-mm. motion-picture film were taken as a part of the records.

I am indebted to the Bowdoin students for assistance in collecting birds and especially to Howard H. Vogel, Jr., who prepared some of the skins. Mr. Vogel also made collections of insects and parasites. Every bird was thoroughly examined for parasites at the time it was killed. A list of the Mallophaga and their hosts is included as a part of this paper. Finally I wish to express my gratitude to Commander Donald B. MacMillan through whom the expedition was made possible and who cooperated in every way to make the trip enjoyable, and the scientific work successful.

For a general account of the expedition the reader is referred to the September, 1935, issue of *Natural History Magazine* (vol. 36, pp. 133-148). To assist the reader in locating the geographical positions of places where birds were collected the following itinerary of the more important stops of the expedition with dates is given.

- June 16-20 Portland; Maine and Nova Scotia coasts; Gut of Canso; Port Hawkesbury; Cape Breton Island, N. S.
- June 20-21 Port Hawkesbury.
- June 22-23 Magdalen Islands.
- June 24 Bird Rock.
- June 25-26 Mecatina (also spelled Mekattina) Island and north shore of the Gulf of St. Lawrence.
- June 27 Eau St. Clair Harbor; Straits of Belle Isle; Battle Harbor.
- June 27-29 Battle Harbor; Greater Caribou Island.
- June 29-July 1 Assisez Harbor and islands.
- July 2 Sophia Harbor.
- July 3 Gannet Islands; Indian Head; North Shoal Bay.

- July 4 Aillek Bay.
 July 5-6 Hopedale.
 July 7 Kauk Harbor; Nain.
 July 8 Commander MacMillan's Scientific Station and return to Nain.
 July 9 Port Manvers.
 July 10 Saddle Island; Cape Mugford (Dr. David Potter and two students put ashore at Cape Mugford).
 July 11 Grenfell Tickle (also known as MacLellan Strait or Chidley Strait).
 July 12 Bowdoin Harbor (newly named); Cape Chidley, 60° 25' N.
 July 13 Lady Job Harbor; Harvey Harbor; Gray Straits, 60° 32' N.
 July 14-22 Port Burwell (Killineck); motor-boat trip to Cape Chidley and various trips on foot.
 July 23-31 A. O. Gross, four students and an Eskimo guide on the Button Islands. Commander MacMillan, three students, three members of the crew to Cape Mugford to pick up Dr. Potter's party and return to Button Islands, 60° 35' N.
 Aug. 1 Port Burwell; attempt to reach Baffin Island; retreat to Grenfell Tickle.
 Aug. 2-5 Grenfell Tickle and harbors at eastern end of Tickle.
 Aug. 6 Eclipse Harbor.
 Aug. 7-8 Sea Plane Cove; Louse Harbor; Seven Islands Bay; Kau-majet Mountains.
 Aug. 9 Bishop's Mitre; Cape Mugford; Lady Bight Harbor.
 Aug. 10 Port Manvers; Nain.
 Aug. 11 Taber Island; MacMillan's Station; Anaktalok Bay; Nain.
 Aug. 12 Nain; Perkalujuk Island via motor boat and return to Nain.
 Aug. 13 Voise Bay.
 Aug. 14 Perret Tickle and Islands; Windy Tickle.
 Aug. 15 Hopedale; Turnavik West; Red Islands.
 Aug. 16 Turnavik West; Red Islands; Jock's Islands; Makkovik.
 Aug. 17 Tinker Island; various unnamed islands; Indian Harbor.
 Aug. 18 Motor-boat trip to Puffin Island and return to Indian Harbor; Hamilton Inlet.
 Aug. 19 Herring Gull Islands; Gannet Islands; Indian and Domino Ticks.
 Aug. 20 Battle Harbor; Anton's Cove.
 Aug. 21 Cape Charles; Henley's Harbor; St. Peter's Islands.
 Aug. 22-23 Red Bay.
 Aug. 24 Western Newfoundland coast.
 Aug. 25 Sydney.
 Aug. 26 Port Bevis; Bras d'Or Lakes.
 Aug. 27 St. Peter's Locks; Port Hawkesbury.
 Aug. 29 Nova Scotia coast.
 Aug. 30 Bowdoin Scientific Station; Kent's Island, Bay of Fundy.
 Aug. 31 Rockland, Maine.
 Sept. 1 Portland, Maine.

ANNOTATED LIST OF BIRDS

COMMON LOON, *Gavia immer immer* (Brünnich).—A pair was seen at Amherst Island of the Magdalen group, Gulf of Saint Lawrence, on June 22. A lone individual was flying about Bird Rock June 25. On June 27, thirty-two Common Loons were counted en route from the Straits of Belle Isle to Battle Harbor, Labrador. On

July 17 an adult was seen swimming about in a small fresh-water pond near Port Burwell; the bird's behavior indicated that it was nesting, but neither eggs nor young were found. The presence of several other individuals in the vicinity makes it highly probable that the Common Loon is a nesting bird in Labrador north of the 60th parallel.

RED-THROATED LOON, *Gavia stellata* (Pontoppidan).—The first Red-throated Loons were seen when we reached the Straits of Belle Isle, and thereafter they appeared frequently. We saw them singly but more often in pairs or groups of three or four flying high or in advance of our bow. A few of them were noted at considerable distances offshore. I counted fifty-four Red-throated Loons on July 7 during the trip between Hopedale and Nain, evidence of the great abundance of these birds along the Labrador coast. On July 23 a pair was seen flying over the "Bowdoin" as we entered the channel between the islands comprising the Button group. We saw several breeding pairs during our stay on the islands July 23-31.

A male bird weighing 1973 grams, length 678 mm., extent 1175 mm., was taken August 2 on a small lake near the entrance of Grenfell Tickle, northern Labrador. The stomach contents, weighing 14.8 grams, consisted of small stones and partially digested masses of fish. On August 14 three Red-throated Loons were seen at Windy Tickle.

SOOTY SHEARWATER, *Puffinus griseus* (Gmelin).—The Sooty and Greater Shearwaters were seen off the Nova Scotia coast on June 19. Both species were also present in large numbers along the Labrador coast between the Straits of Belle Isle and Battle Harbor on June 27. Sooty Shearwaters were observed at Hopedale, July 6, a pair at Indian Harbor, August 17 and one at Henley Harbor, August 21. We again noted them in large numbers along the Nova Scotia coast on August 30. They were extremely wary and seldom came near our boat.

GREATER SHEARWATER, *Puffinus gravis* (O'Reilly).—Many Greater Shearwaters were seen off the Nova Scotia coast on June 19 and again on our return August 30. They were common on the Newfoundland Labrador between the Straits of Belle Isle and Battle Harbor on June 27.

ATLANTIC FULMAR, *Fulmarus glacialis glacialis* (Linnaeus).—The first Fulmars were seen along the Labrador coast at 54° N. latitude. They are the most abundant and conspicuous of the birds in Gray Straits off Cape Chidley and on the waters surrounding the Button Islands. No less than three thousand of these birds were seen on July 13 and 14 in going from Cape Chidley, the extreme northern end of the Labrador Peninsula, to Port Burwell on Ungava Bay. They were in small groups of from two to six to flocks comprising more than a hundred birds. Many were resting on the ice pans and others were actively fishing in the cold water. Several times our boat nearly ran down certain individuals which had become sluggish from an over indulgence in the abundant food supply.

The great number of Fulmars in the vicinity of the Button Islands has lead ornithologists to believe that the birds breed on the high cliffs of these rugged islands but our search for them resulted in negative evidence. Eskimos who are keen observers of bird life and whose statements concerning other birds have been found to be correct, insist that the Fulmars do not nest in northern Labrador and that no young birds have ever been found by them. I am of the opinion that the great concentration of Fulmars in Gray and Hudson Straits is due, not to the presence of nearby nesting sites, but to the prevalence of food such as mollusks and small arthropods brought by the tides and polar currents and made accessible at the surface by

the turbulent churning waters and eddies which occur in the Straits. The Fulmars are known to breed near Cape Searle and Coutt's Inlet and probably on islands in Cumberland Sound, southeastern Baffinland, and it is not at all improbable that breeding birds fly the intervening distance to this rich feeding ground when hard pressed by want of food. It is well known that other members of the Procellariiformes such as the petrels fly long distances in search of food and are regularly absent from their mates for three or four days and even longer. An examination of the reproductive organs revealed mature and sexually active males and females in both the dark and the light phases of plumage. This is further corroborative evidence that these color phases of the Fulmar result from dichromatism and not from differences due to sex or age of the individuals. No immature birds were collected and none was recognized among the thousands of individuals observed. Large numbers were seen daily during our stay on the Button Islands. They frequented the channels which separate the islands but during fair weather moved to the deeper waters of the Straits. On our return trip the Fulmars were seen at various places along the Labrador coast. The last were recorded August 21 in the Straits of Belle Isle north of Newfoundland.

The following specimens of Fulmars were collected:

Number	Sex	Color Phase	Place	Date	Weight in grams
1053	female	light	Gray Straits, Lab.	July 13	648
1054	male	dark	Port Burwell, P. Q.	July 14	730
1055	female	light	Port Burwell, P. Q.	July 14	711
1058	male	light	Port Burwell, P. Q.	July 14	695
1106	female	dark	Cape Chidley, Lab.	July 22	643
1107	male	light	Cape Chidley, Lab.	July 22	654
1108	male	light	Cape Chidley, Lab.	July 22	717
1109	female	dark	Cape Chidley, Lab.	July 22	692
1110	female	light	Cape Chidley, Lab.	July 22	729
1111	male	light	Cape Chidley, Lab.	July 22	829
1112	male	dark	Cape Chidley, Lab.	July 22	803
1125-b	male	dark	Cape Chidley, Lab.	July 22	638
1125-c	female	light	Cape Chidley, Lab.	July 22	682

The following table presents a convenient summary of the numbers of males and females in the dark and light phases respectively among the specimens collected.

	Dark phase	Light phase	Total
Female.....	2	4	6
Male.....	3	4	7
Total.....	5	8	13

LEACH'S PETREL, *Oceanodroma leucorhoa leucorhoa* (Vieillot).—When we visited Bird Rock on June 24 there were about twenty burrows of Leach's Petrel in the soil which covers the top of the castle-like island. There is a thriving colony of petrels on Saint Paul's Island in the Gulf of Saint Lawrence, north of Cape Breton Island, Nova Scotia. Many of the petrels which we saw in going across the Gulf were probably representatives of one or the other of these two colonies.

On Saint Peter's Islands off Cape Charles, south of Battle Harbor, Labrador, is the most northern colony of Leach's Petrels, as far as I can ascertain, on the Atlantic side of the American coast. Saint Peter's group comprises about a half dozen cliff-

like islands ranging from 100 to 300 yards in length. The birds make their burrows in the dark reddish-brown soil which covers the tops of the islands. On the so-called Western Island there were about twenty-five nesting holes. On August 20, 1933, Ernest Dionne secured about a dozen petrels including both adults and young as well as a number of eggs from this place.

A Leach's Petrel was captured alive, on August 21, in one of the dories lashed to the deck of the "Bowdoin," while we were anchored at Henley Harbor. The bird was not injured but was in a semi-exhausted state. It was a male weighing 36.8 grams; length 210 mm.; extent 474 mm. The stomach was empty.

WILSON'S PETREL, *Oceanites oceanicus* (Kuhl).—Wilson's Petrel was common off the Maine and Nova Scotia coasts on June 17-19 and again on August 29-30. Several were noted in the Gulf of Saint Lawrence and along the southern Labrador coast.

GANNET, *Morus bassana* (Linnaeus).—We saw Gannets in winter and nuptial plumages and others in a transitional condition, along the Nova Scotia coast on June 19. Many were seen as we approached the Magdalen Islands in the Gulf of Saint Lawrence on June 22. At Bird Rock, June 24, the Gannets were well established at the rookery; practically all of the nesting birds were incubating eggs. An estimate of the number of Gannets on the main island and nearby rocks was 2,500 birds. Gannets were seen during our cruise across the Gulf of Saint Lawrence but after leaving the Straits of Belle Isle not one was observed on the Labrador coast northward. When we returned to the Gulf of Saint Lawrence during the last week of August many adults, some in company with their young, were seen.

EUROPEAN CORMORANT, *Phalacrocorax carbo carbo* (Linnaeus).

DOUBLE-CRESTED CORMORANT, *Phalacrocorax auritus auritus* (Lesson).—Both species of cormorants were seen in the Gulf of Saint Lawrence but often the flocks were too far away to be certain of the species. There are thriving colonies of both, the most important located on islands along the north shore of the Saint Lawrence. The Double-crested Cormorant is by far the more abundant species. No cormorants were seen north of the Straits of Belle Isle.

COMMON CANADA GOOSE, *Branta canadensis canadensis* (Linnaeus).—One was seen at Port Burwell, P. Q., on July 18. On August 15 we saw four young Canada Geese about three weeks old which were being reared in captivity by the radio operator of the Hopedale station, Labrador. The young were hatched from eggs found in a nest a few miles from the village. At the same place an Eskimo gave me a stuffed specimen which had been killed the preceding spring. The only other Canada Geese noted were a flock of twelve seen flying south at Port Bevis, Nova Scotia, August 26.

AMERICAN BRANT, *Branta bernicla hrota* (Müller).—Our only record of the American Brant is of a stuffed specimen brought to the "Bowdoin" by an Eskimo at Hopedale, Labrador.

COMMON MALLARD, *Anas platyrhynchos platyrhynchos* Linnaeus.—A Common Mallard was killed on November 12, 1933, by one of the Canadian Mounted Police stationed at Port Burwell.

BALDPATE, *Mareca americana* (Gmelin).—A specimen of the Baldpate was shown me at Mecatina Island by a native fisherman who stated that he caught the bird in one of his fox traps on December 15, 1933.

OLD-SQUAW, *Clangula hyemalis* (Linnaeus).—A male in a state of moult was col-

lected near Killineck, P. Q., Ungava Bay, on July 15, 1934. This lone bird was observed for several days in the harbor and no other ducks were seen in the vicinity. It dove for its food in water ranging from five to ten feet deep. The contents of the stomach consisted of large quantities of shrimp and small bivalve mollusks ranging from 0.5 to 1 centimeter in length. The bird weighed 697 grams.

EASTERN HARLEQUIN DUCK, *Histrionicus histrionicus histrionicus* (Linnaeus).—A male alighted near the "Bowdoin" during a fog while we were anchored at Port Burwell, P. Q., on July 19, 1934. According to Commander MacMillan both adult and young Harlequin Ducks are common at his station on Anaktalak Bay during the month of August.

NORTHERN EIDER, *Somateria mollissima borealis* (Brehm).—The first Northern Eiders collected were at Hopedale, Labrador, on July 6. Eiders seen at points south of Hopedale may have been *borealis* but identifications were not positive as all of the birds were in flight or on the water at distances too great to differentiate the subspecies. It is reasonable to infer that practically all of the birds seen north of Hopedale were of the northern form.

On July 12 a flock of fifty-four eiders flew out of the passage leading into Bowdoin Harbor and the next day about a hundred including many males were seen in the vicinity of Cape Chidley, the northern tip of the Labrador Peninsula. During a collecting trip taken in a power boat among the islands between Port Burwell and Cape Chidley on July 22, eiders were in evidence. There were numerous flocks ranging in size from five or six to others numbering twenty-five to thirty or more individuals. Many of the males were moulting and represented various transitional conditions of plumage. No young were seen until we reached the Button Islands on June 23. Several broods were noted as we sailed through the channel separating MacColl and Lawson Islands of the group. Females with broods of young were frequently seen but very few males were present during our stay on the islands, July 23-31. On August 1 there were eighteen eiders at the eastern end of Grenfell Tickle and on August 4 a flock of twenty-three, including eight males, was flushed as we entered Eclipse Harbor. In the protected upper end of the harbor reached by means of a dory there was a large number of females with broods of young of varying age.

Small flocks of eiders were seen at Louse Harbor on August 7 and at Port Manvers Run on August 10. Among the islands at Turnavik West there was an unusually large number of eiders with broods. Some of the young were more than half grown. The few males seen were moulting. On the Red Islands there were about a dozen nests containing eggs on August 16, a late date, which probably represented a second attempt at nesting after the first eggs had been robbed or destroyed.

When we went northward we found the eiders in the height of their nesting activities on many of the smaller islands within ten miles of Hopedale. The majority of the nests were on rocky ledges which supported only a sparse growth of grass. In many instances the nests were built in little depressions among the rocks with nothing but the eider down to conceal the eggs during the absence of the females. Some of the islands of less than a half acre in extent provided nesting sites for from twenty-five to thirty pairs of birds. At the time of our visit, July 6, there were no young and the vast majority of the eggs were fresh or with incubation not far advanced. The average size of the sets in nearly a hundred nests examined was four, the largest set was seven and the smallest number was two in what were thought to be complete sets. Weights and measurements were made of 103 eggs of the Northern Eider with the following results:

Average weight.....	98.57 grams
Average long diameter.....	77.07 millimeters
Average short diameter.....	50.87 millimeters

The maximum weights and measurements of individual eggs are shown in the following table. The maximum measurement is italicized in each case.

Weight	Long diameter	Short diameter
100.9	85	48
110.1	79	54
111.5	79	53

The minimum weights and measurements of individual eggs are shown in the following table. The minimum measurement is italicized in each case.

Weight	Long diameter	Short diameter
81.2	71	50
75.5	72	46

The measurements and weights of six sets of eggs of the Northern Eider are as follows:

Weight	Long diameter	Short diameter
Set Number 1		
104.3	77	53
98.1	80	51
110.1	79	54
Set Number 2		
96.8	79	51
103.2	78	50
Set Number 3		
91.7	75	51
83.2	73	50
92.4	78	49
91.7	78	49
87.5	76	49
Set Number 4		
109.5	84	52
98.1	76	52
105.6	77	53
90.1	73	50
111.5	79	53
Set Number 5		
102.9	75	52
82.9	71	48
109.4	80	53
92.1	76	49

Weight	Long diameter	Short diameter
	Set Number 6	
95.2	81	49
103.5	80	51
102.2	80	52
85.4	82	51
104.3	77	53

In the following table is a list of the Northern Eiders collected:

Number	Sex	Place	Date	Weight in grams
1027	male	Hopedale, Labrador	July 6	1798
1029	female	Hopedale, Labrador	July 6	1619
1030	female	Hopedale, Labrador	July 6	1607
1031	female	Hopedale, Labrador	July 6	1449
1032	female	Hopedale, Labrador	July 6	1518
1114	male	Cape Chidley, Lab.	July 22	2100
1144	female	Bowdoin Harbor, Lab.	July 29	1710
1170	female	Eclipse Harbor, Lab.	Aug. 6	1525
1171	female	Eclipse Harbor, Lab.	Aug. 6	1201
Young				
1165	male	Eclipse Harbor, Lab.	Aug. 6	381
1167	female	Eclipse Harbor, Lab.	Aug. 6	56.5

The stomach contents of the above birds was made up of large numbers of mollusks, chiefly *Mytilus*, a few stones and a small quantity of vegetable pulp.

AMERICAN EIDER, *Somateria mollissima dresseri* Sharpe.—The American Eider was very common along the north shore of the Gulf of Saint Lawrence where large flocks comprising both males and females were observed June 25–26. Twelve were seen at Assisez Harbor on July 1 and several flocks ranging from three to a dozen individuals, presumably the American Eider, were seen in the vicinity of the Gannet Islands. One male specimen in an advanced state of moult, weight 2105 grams, was collected at Hopedale, Labrador, on July 6. This is the most northern record of *dresseri* that was obtained by the expedition of 1934. P. A. Taverner informs me that specimens he has examined from the north shore of the Saint Lawrence resemble the northern form more closely than they do the southern subspecies. The distribution of the two needs further study.

WHITE-WINGED SCOTER, *Melanitta deglandi* (Bonaparte).—The White-winged Scoter is a very common species along the Labrador coast although it has never been found nesting in that region. The Nascopie Indians of the northern Labrador Peninsula report that the scoters nest in the dense vegetation along the streams and ponds of the interior. There are, however, no authentic records, to my knowledge, that have been made by reliable observers.

On July 3 two flocks of nine and ten birds, respectively, were seen south of the Gannet Islands; July 4–5 between Aillek Bay and Hopedale many small flocks were seen; and July 8–10 hundreds of White-winged Scoters were noted as we passed among the islands between Hopedale and Cape Mugford. On July 11 a flock of ten was seen in Grenfell Tickle north of the 60th parallel at a point about one and a half miles from the Atlantic side of the peninsula. The last constitutes our most northern record of the White-winged Scoter. There were none on the Button Islands.

SURF SCOTER, *Melanitta perspicillata* (Linnaeus).—There was a large number of Surf Scoters among the numerous flocks of White-winged Scoters seen between Hopedale and Cape Mugford, July 8–10, 1934.

AMERICAN SCOTER, *Oidemia americana* Swainson.—Several small flocks were seen at Cape Mugford on July 10; and on the return trip a flock of about forty birds was seen at Windy Tickle, August 14.

RED-BREASTED MERGANSER, *Mergus serrator* (Linnaeus).—One young was secured by an Eskimo from a brood found near Hopedale, Labrador. A pair of Red-breasted Mergansers with a brood of seven young was seen at Port Bevis, Bras d'Or Lakes, on August 26.

EASTERN GOSHAWK, *Astur atricapillus atricapillus* (Wilson).—Dr. Paul Hettasch Moravian missionary at Nain, gave me a specimen of the Eastern Goshawk in immature plumage collected by him at Makkovik, Labrador, November 15, 1933.

AMERICAN ROUGH-LEGGED HAWK, *Buteo lagopus sancti-johannis* (Gmelin).—The Rough-legged Hawk is a common breeding bird along the coast of Labrador. On July 6 we found a pair nesting on a cliff north of Hopedale; July 8 a pair was nesting on the side of a mountain at the head of Anaktalak Bay, the site of Commander MacMillan's scientific station. On July 9, Commander MacMillan and I climbed the cliffs on a mountain opposite Nain, where from a point above the eyrie of a Rough-legged Hawk we looked into the nest containing three young. These were downy white but with conspicuous patches of black feathers of the juvenal plumage making their appearance through the down. The nestlings huddled closely together and remained motionless in response to the warning cries uttered by the adults circling high above the cliffs. The young had left the nest when we stopped at Nain on August 10. The behavior of a pair of Rough-legged Hawks at Port Manvers gave evidence that they were nesting but we were unable to locate the nest. Two pairs were seen when we rounded Cape Chidley on July 12.

On July 16, while photographing a pair of Snow Buntings at their nest near Port Burwell, a Rough-legged Hawk made several unsuccessful attempts to capture the buntings. A nest of the Rough-legged Hawk containing three eggs was found July 20, on an overhanging ledge of a mountain two miles northeast of Port Burwell. On August 7 three Rough-legged Hawks were flying high over the mountains at Sea Plane Cove and on August 9 a pair was observed at an elevation of 2,500 feet on Mount Brave in the Cape Mugford region. Others were seen at Perret's Tickle and Windy Tickle, August 14; Gannet Islands, August 19; and a pair at Cape Charles, August 21. Several deserted nests on the cliffs at the Gannet Islands were probably those of the Rough-legged Hawk.

MARSH HAWK, *Circus hudsonius* (Linnaeus).—A male Marsh Hawk was seen flying over the marshes of Amherst Island of the Magdalens on June 22. None was seen on the coast of Labrador.

OSPREY, *Pandion haliaëtus carolinensis* (Gmelin).—An Osprey was taken at Indian Harbor, Labrador, by a native fisherman on July 20, 1934. One was seen at Port Bevis, N. S., on August 26.

WHITE GYRFALCON, *Falco rusticolus candicans* Gmelin.—At Nain, Labrador, Dr. Paul Hettasch gave me the legs and wings of a White Gyrfalcon which, he stated, were of a specimen collected by an Eskimo during the past year. Unfortunately the date of capture was not known.

BLACK GYRFALCON, *Falco rusticolus obsoletus* Gmelin.—On July 26 a pair of Black Gyrfalcons was seen on a shelf of rocks of a high inaccessible cliff north of Hopedale,

Labrador. They were probably nesting. Several birds seen in northern Labrador were probably of this species but the long range at which they were observed made identification uncertain.

DUCK HAWK, *Falco peregrinus anatum* Bonaparte.—A splendid specimen of the Duck Hawk was seen on August 6 as it dashed by in pursuit of its prey on a mountain side near Eclipse Harbor, Labrador. On August 19 we discovered two nests of the Duck Hawk on the cliffs of the Gannet Islands. One of the nests had been deserted but the other contained two young. The young of the second nest took flight as soon as they were disturbed by members of the expedition. The adults exhibited great anxiety for their young and had no hesitancy in swooping down in defiance of the human intruders. About the nest were remains of Puffins and Guillemots. The alcids breed in large numbers on the Gannet Islands and doubtless provide the most important source of food for the Duck Hawks during the nesting season.

HUDSONIAN SPRUCE GROUSE, *Canachites canadensis canadensis* (Linnaeus).—A Spruce Grouse, presumably a Hudsonian Spruce Grouse, was flushed from a low thick growth of spruce in a ravine on Assisez Island, July 1. Three were flushed in the spruce woods near the Mission at Nain and two were seen in the woods at the head of Anaktalak Bay on August 12. Judging from the reports of the natives, grouse were very abundant in the interior during 1933-34. The fact that we recorded only six individuals during the entire summer is because our observations were limited to the coast and chiefly to the outer islands.

ROCK PTARMIGAN, *Lagopus rupestris rupestris* (Gmelin).—On our northward cruise, ptarmigan were not encountered until we reached the Button Islands. The Rock Ptarmigan is a common breeding bird on all the islands of the Button group. Flocks of young observed during the last week of July were practically full grown. On our trips about the islands we found many remains, chiefly masses of feathers of ptarmigan which apparently had been killed by the Arctic Foxes. An examination of numerous fox droppings also revealed that the chief food of these predators was ptarmigan and other birds that inhabit the islands. It is interesting to note that the Snow Buntings, which nested in crevices of the cliffs, used the breast feathers of ptarmigan exclusively in lining their nests. The immense quantity of ptarmigan droppings found especially on the upper terraces of the hills is indicative of the great number of these birds, a number augmented by the hordes which visit these islands during the spring and fall migrations. According to P. A. Taverner the migrating birds are probably *kelloggae*.

Six specimens, two males and four females, collected on the Buttons exhibited various stages of moult. The size of the gonads of the adults indicated that they were breeding birds. The crop and stomach contents of these specimens consisted entirely of vegetable matter made up chiefly of the dwarf willow, *Salix herbacea*, and the leaves and seeds of the knotweed, *Polygonum*. The latter was present in the largest amount and in four of the birds, seeds of this plant made up the entire contents. The weight of the food contents of the crops was 12.8, 5.8, 7.1, 10.8, 12.5 and 8.9 grams, respectively.

The mounted police and the factor of the Hudson's Bay post stationed at Port Burwell informed me that the Rock Ptarmigan frequent the hills along Grenfell Tickle and that nests containing eggs were found early in June.

In addition to the nesting individuals, immense flocks of ptarmigan, some of them containing thousands of individuals, concentrate in the region of Cape Chidley during the migration season. The birds begin to appear about the first of May and the height of numbers is reached by the first of June. The birds remain on the main-

land until the spring moult is completed and then fly across Gray Straits directly toward the Buttons. The great bulk of those reaching this way station continue on across Hudson Straits to Baffin Island and other islands lying to the northward. In the autumn the migration reaches its maximum about October 1-15. At this time hundreds of the birds are killed by the Eskimos who salt them down to be used as a source of food during the winter.

On our return from the Buttons, numbers of ptarmigan were observed in the Cape Chidley region and at the eastern entrance of Grenfell Tickle. At the latter place Mr. Braley Gray, a member of the expedition, collected a male and four young from a brood of six. It is of interest to note that these young were less than a quarter grown and barely able to fly, a late brood compared to those found on the Button Islands. One adult female ptarmigan was killed and one captured alive at an elevation of 2,000 feet on a mountain side near Eclipse Harbor. This harbor which is just below the 60th parallel marks the most southern point at which we collected or observed Rock Ptarmigan.

The following is a list of specimens collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1117	female	Button Islands	July 23	360	578	451
1118	male	Button Islands	July 23	375	630	486
1119	male	Button Islands	July 23	392	632	501
1126	female	Button Islands	July 28	378	625	461
1138	female	Button Islands	July 30	355	598	411
1159	female	Button Islands	July 30	368	595	458
1133	male	Cape Chidley	July 29	388	648	498
1161	female	Eclipse Harbor	Aug. 6	371	580	445
1166	female	Eclipse Harbor	Aug. 6	355	610	490

Detailed weights and measurements of four young collected from a brood of six found at the eastern end of Grenfell Tickle, August 6, are:

Number	1146	1147	1148	1149
Sex	female	male	female	male
Weight in grams	97.6	112.6	95.3	87.5
Length	185	190	176	185
Extent	368	369	352	352
Wing	110	106	98	105
Fifth primary	60	74	66	72
Tarsus to toe	51	52	52	51
Third toe	22	22	22	22
Third toe nail	5	5	5	5
Bill	11	12	12	11
Bill to nostril	8	8	7	8
Tail	42	41	33	40
Middle tail feather	22	23	20	30

AMERICAN COOT, *Fulica americana americana* Gmelin.—An American Coot was caught in a trap by a fisherman at Mecatina Island, P. Q., on December 20, 1933. I examined this mounted specimen when the "Bowdoin" stopped at the island on June 25, 1934. It has since been sent to the National Museum at Ottawa, Canada.

PIPING PLOVER, *Charadrius melodus* Ord.—A Piping Plover was collected at the

Magdalen Islands on June 23. This plover was very common along the sandy beaches of Amherst Island where it probably breeds.

SEMIPALMATED PLOVER, *Charadrius semipalmatus* Bonaparte.—This little plover was the commonest of the shore birds and was seen at practically all of the stops made by the expedition as far north as Cape Chidley and Port Burwell. Twelve were seen on the sandy beaches of the Magdalen Islands where we also obtained our southernmost record of their nesting, on Amherst Island, June 23. Nests of this plover were found and studied at Saint Mary's Islands southwest of Harrington Harbor, during the summer of 1931. A family of four young was seen at Eclipse Harbor, August 6. One of the young was collected.

Specimens collected are as follows:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1012	female	Magdalen Islands	June 23	180	378	42.5
1074	male	Port Burwell	July 17	—	—	46.2
1162	male	Eclipse Harbor	Aug. 6	185	388	46.0
1163	male im.	Eclipse Harbor	Aug. 6	138	321	31.8
1202	?	West Turnavik	Aug. 16	164	362	36.8

The stomach contents of the birds collected consisted wholly of insects.

RUDDY TURNSTONE, *Arenaria interpres morinella* (Linnaeus).—Five Ruddy Turnstones were seen flying near the "Bowdoin" when we were under sail along the western Newfoundland coast on August 24.

SPOTTED SANDPIPER, *Actitis macularia* (Linnaeus).—Several Spotted Sandpipers were feeding along the graveled beaches of Assisez Island, July 1, 1934. Two adults were seen on the shore at the head of Anaktalak Bay, Labrador, on August 11. A specimen in immature plumage was secured at Henley Harbor, August 21.

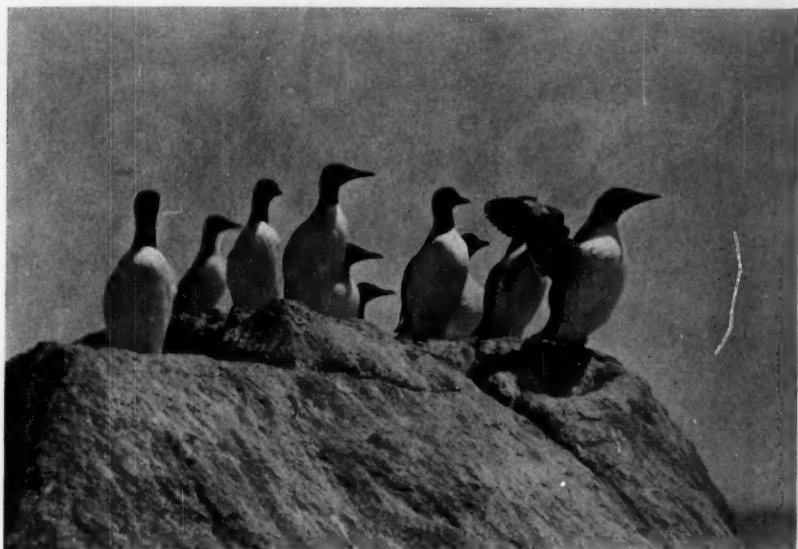
GREATER YELLOW-LEGS, *Totanus melanoleucus* (Gmelin).—Two Greater Yellow-legs were collected at Turnavik West, Labrador, on August 16; on August 21, we noted twelve at Henley Harbor. They were common at Port Bevis, Nova Scotia, on August 26.

Number	Sex	Place	Date	Length	Extent	Weight in grams
1194	female	Turnavik West	Aug. 6	335	595	152.5
1195	female	Turnavik West	Aug. 6	335	618	163.6

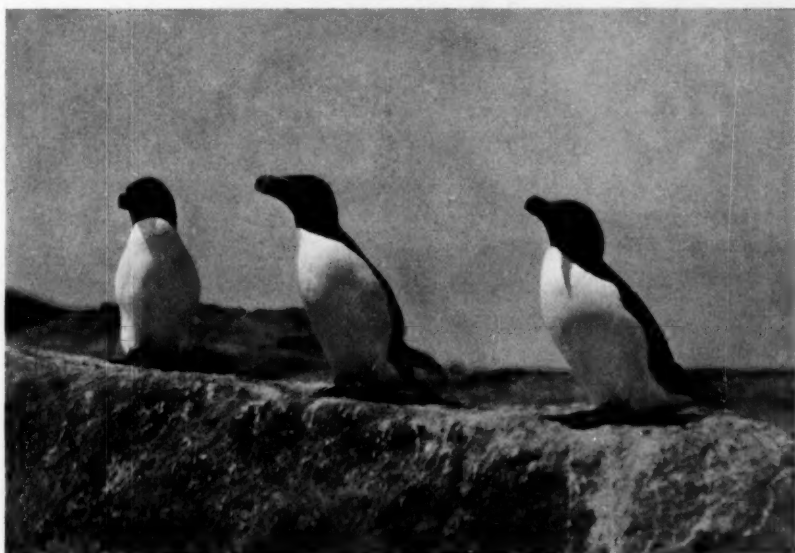
The food in the stomachs of the two specimens was insects.

PURPLE SANDPIPER, *Arquatella maritima* (Brünnich).—The first flight of Purple Sandpipers occurred on July 28 when we were on the Button Islands and thereafter these birds were common in favorable places along the rugged rocky shore lines. Later we noted them in large numbers at Grenfell Tickle, Windy Tickle, Makkovik, Eclipse Harbor and Turnavik West during the first two weeks of August. The following specimens were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1130	male	Lacy Island, Buttons	July 29	205	392	71.8
1134	male	Lacy Island, Buttons	July 30	220	398	71.0
1139	male	Bowdoin Harbor	July 29	212	380	59.8
1140	female	Lacy Island, Buttons	July 30	235	401	61.0
1141	female	Bowdoin Harbor	July 29	225	410	60.0

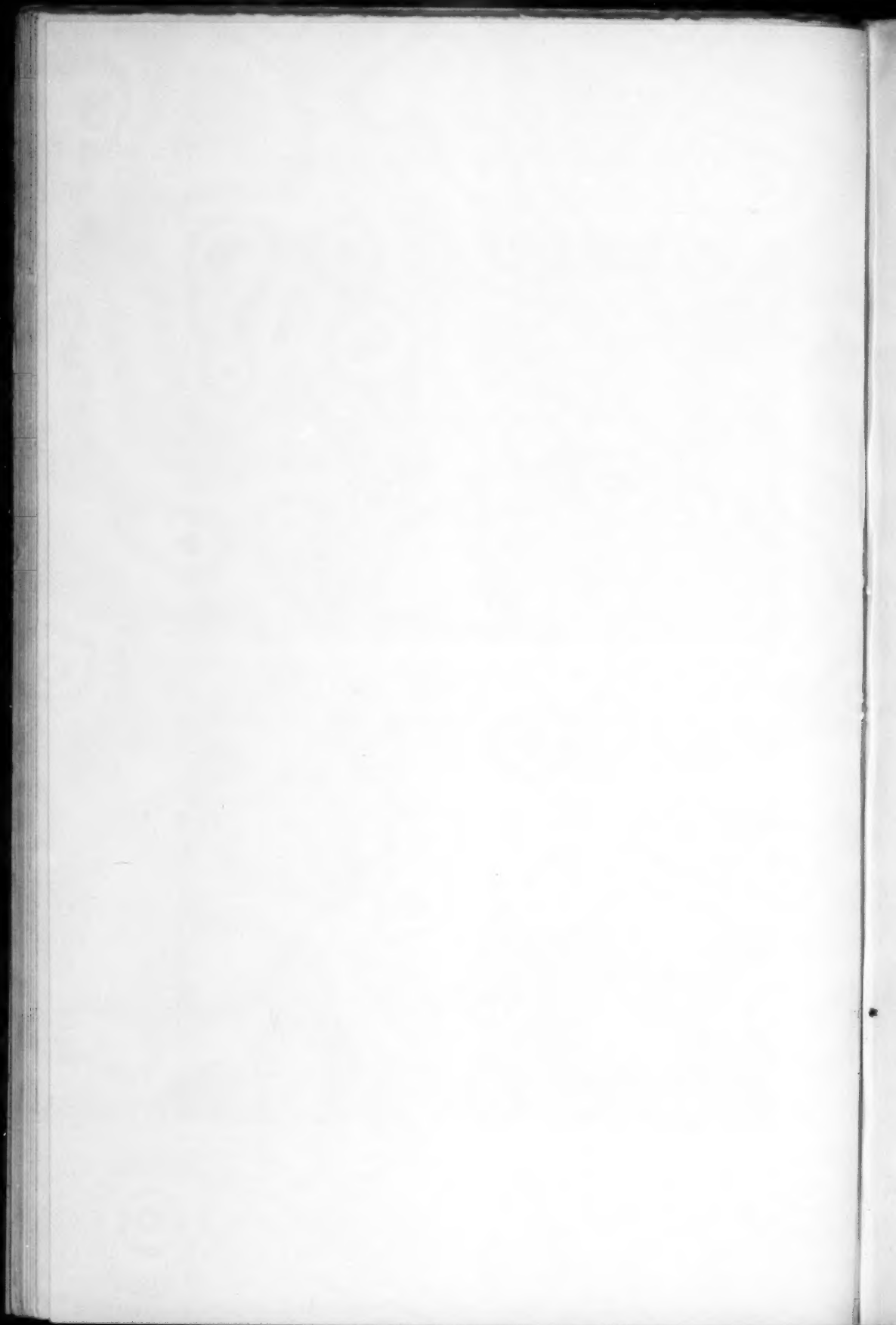


MURRES ON A BOULDER IN MIDST OF A NESTING COLONY



RAZOR-BILLED AUKS





Number	Sex	Place	Date	Length	Extent	Weight in grams
1142-a	female	Grenfell Tickle	Aug. 1	235	410	64.4
1142-b	male	Lacy Island, Buttons	July 30	215	375	56.2
1142-c	male	Lacy Island, Buttons	July 30	211	384	58.5
1142-d	female	Bowdoin Harbor	July 29	221	390	54.4
1142-e	female	Bowdoin Harbor	July 29	239	410	66.6
1142-f	female	Grenfell Tickle	Aug. 1	236	415	73.8
1151	female	Grenfell Tickle	Aug. 3	238	415	85.0
1196	male	Turnavik West	Aug. 16	205	390	68.3

The stomach contents consisted of snails, shrimp and vegetable matter along with varying quantities of gravel.

WHITE-RUMPED SANDPIPER, *Pisobia fuscicollis* (Vieillot).—The first White-rumped Sandpipers of the autumn migration were seen on August 1 at Grenfell Tickle where we collected a male bird. They were seen at Eclipse Harbor on August 6, and on August 15 flocks of them were seen at the Red Islands, Jock's Islands and at Turnavik West. August 16 we noted them at Makkovik; August 17 at Indian Harbor; and on August 18 they were very common at Puffin Island. The following specimens were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1143	male	Grenfell Tickle	Aug. 1	182	364	54.8
1164	male	Eclipse Harbor	Aug. 6	182	369	49.2
1189	female	Turnavik West	Aug. 16	180	375	62.9
1203	female	Turnavik West	Aug. 16	188	370	58.5
1223-b	female	Turnavik West	Aug. 15	192	390	61.5
1223-c	female	Turnavik West	Aug. 16	185	380	50.2

The stomach contents of the above specimens consisted of small crustaceans, insects and a small amount of vegetable matter and gravel.

LEAST SANDPIPER, *Pisobia minutilla* (Vieillot).—The first Least Sandpipers were seen and one was collected at Windy Tickle on August 14. On August 16 a great migration wave occurred and immense flocks numbering hundreds were seen about the islands at Turnavik West. On August 20 large numbers were seen at Battle Harbor and Cape Charles and again on the following day at Henley Harbor. Four specimens were collected. Food was chiefly insects.

Number	Sex	Place	Date	Length	Extent	Weight in grams
1184	female	Windy Tickle	Aug. 14	144	298	24.5
1197	male	Turnavik West	Aug. 16	141	280	19.2
1198	?	Turnavik West	Aug. 16	141	282	21.3
1236	female	Red Bay, Lab.	Aug. 22	148	294	23.0

EASTERN DOWITCHER, *Limnodromus griseus griseus* (Gmelin).—On August 15 four Eastern Dowitchers were seen at Turnavik West, one of which was collected.

Number	Sex	Place	Date	Length	Extent	Weight in grams
1187	male	Turnavik West	Aug. 15	254	458	86.4

The food found in the stomach consisted of a few insects, unidentifiable vegetable matter and gravel.

SEMIPALMATED SANDPIPER, *Ereunetes pusillus* (Linnaeus).—Semipalmated Sandpipers were seen among flocks of Least Sandpipers but it was only under favorable circumstances that the two species could be differentiated. Both species were collected from the same flocks at Turnavik West. Individuals were identified at Indian Harbor and Red Bay where they also were associated with Least Sandpipers. The following specimens were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1199	female	Turnavik West	Aug. 16	155	310	20.5
1200	?	Turnavik West	Aug. 16	149	291	20.2
1201	?	Turnavik West	Aug. 16	152	305	22.8
1223-d	female	Turnavik West	Aug. 16	—	—	25.8
1223-e	male	Turnavik West	Aug. 16	—	—	23.7
1223-f	male	Turnavik West	Aug. 16	—	—	20.2
1237	male	Red Bay, Lab.	Aug. 22	155	308	21.5

The stomach contents of the above specimens consisted of insects.

SANDERLING, *Crocethia alba* (Pallas).—One specimen was collected July 30 from a flock of seven found on Lacy Island of the Buttons. Several were seen at Henley Harbor on August 21. Specimen no. 1131, female, length 189; extent 387; weight in grams 72.8. Food consisted of small crustaceans.

RED PHALAROPE, *Phalaropus fulicarius* (Linnaeus).—The first Red Phalaropes of the season were seen July 21 at Port Burwell, Ungava Bay. Very dense fogs and strong northerly winds prevailed when these birds appeared in immense flocks some of them comprising thousands of individuals. The surface of the bay was literally covered by masses of these attractive little birds known to the Eskimos as "sargaks." On July 22, between Port Burwell and the Button Islands, we estimated ten thousand of these birds. Some of them were resting on the surface of the water forming great rafts; others were flying and whirling about in compact flocks over the water and the ice packs of Gray Strait. Red Phalaropes were also present in large numbers about the islands and in the channels of the Button group. In a very few days the numbers dwindled rapidly and by the end of July not a single phalarope was to be seen in the region.

The majority of the birds collected were still in the bright nuptial plumage but some of them exhibited stages of the post-nuptial moult and had acquired many new feathers of the winter plumage. The change of plumage was much more advanced in the males than it was in the females. The breast of a male collected at Port Burwell has the reddish-brown feathers of the nuptial plumage almost entirely replaced by the white feathers of the winter plumage.

The following specimens of Red Phalarope were collected at Port Burwell on Ungava Bay, Province of Quebec, on July 21, 1934:

Number	Sex	Length	Extent	Weight in grams
1091	female	225	431	58.5
1092	female	226	422	50.4
1093	female	225	419	52.6
1094	female	226	429	56.8
1095	female	225	388	56.5

Number	Sex	Length	Extent	Weight in grams
1096	female	224	428	52.5
1097	female	216	410	48.5
1098	female	229	420	54.1
1099	female	222	424	52.8
1100	female	216	392	51.6
1101	male	203	387	44.8
1102	male	210	390	40.2
1103	male	204	382	37.2
1104	female	223	419	57.5
1104-a	male	216	397	43.7
1104-b	male	209	389	39.8

WILSON'S PHALAROPE, *Steganopus tricolor* Vieillot.—Ten Wilson's Phalaropes seen off the Nova Scotia coast on June 19 at an approximate longitude of 62° W. and latitude of 44° 30' N. are of interest as this bird does not often occur in this region but is a fresh-water species of the interior of North America. The birds came very near the "Bowdoin" and swam about on the smooth surface of the sea where we could observe them critically for a positive identification.

NORTHERN PHALAROPE, *Lobipes lobatus* (Linnaeus).—No Northern Phalaropes were seen in northern Labrador. On our return trip we saw one flock of twelve and another of seventy-five birds at Red Bay in the Straits of Belle Isle on August 23. A week later we found them common in the mouth of the Bay of Fundy between Cape Sable and Kent's Island, Grand Manan.

POMARINE JAEGER, *Stercorarius pomarinus* (Temminck).—On June 27 about a dozen Pomarine Jaegers were seen between the Straits of Belle Isle and Battle Harbor. A lone individual was noted near Port Burwell on July 22 and on August 2, two were seen off the eastern entrance of Grenfell Tickle. On August 3, five jaegers, presumably the Pomarine, were seen flying in the distance and on August 8 one came near the "Bowdoin" when we were at sea off the Kau-majet range of mountains in northern Labrador.

PARASITIC JAEGER, *Stercorarius parasiticus* (Linnaeus).—A Parasitic Jaeger was seen off Cape Sable, June 28. It was a common species between the Straits of Belle Isle and Battle Harbor June 27. On July 27 several were seen flying back and forth between Lacy and Lawson Islands of the Button group. On August 3 several were seen off the eastern entrance of Grenfell Tickle and four were noted in the vicinity of Port Manvers Run, Labrador, August 10.

LONG-TAILED JAEGER, *Stercorarius longicaudus* Vieillot.—A single individual was seen August 9 at Lady Bight Harbor, northern Labrador.

GLAUCOUS GULL, *Larus hyperboreus* Gunnerus.—On our trip northward we noted Glaucous Gulls for the first time at Aillek Bay on July 5. On the same day, when we were southeast of Hopedale, we passed by a rocky island around which several Glaucous Gulls were flying. Several of the gulls were perched on narrow shelves of rock of a precipitous wall which faced the sea. Commander MacMillan and I climbed to the top of the island and from that vantage point we could see three nests containing eggs, all located in very inaccessible positions. On July 7 we visited a colony on our way to Commander MacMillan's Scientific Station twenty-five miles inward from Nain, Labrador. In one of the narrow passageways high cliffs rise on either side. On the left was a colony of Herring Gulls and on the right were the

nests of the Glaucous Gulls, about twenty-five in number. At this place neither species seemed to tolerate the other near their respective nesting places, although elsewhere it is not unusual to find both species nesting in the same colony.

The majority of the Herring Gull nests were newly built or contained fresh eggs. The nesting season of the Glaucous Gulls was much more advanced. Most of the young of the latter were hiding in the deep cave-like recesses of the rock. The eggs of one nest were in the state of hatching and another contained a set of eggs with well-advanced embryos. A downy young about a day old was collected from another nest. One nest containing a single fresh egg proved to be an exception to the advanced state of nesting of this colony.

On July 9 we found many Glaucous Gulls nesting on the castle-like island of Perkalujak. Time and rough weather did not permit us to land but on our return trip, August 12, we found young of this colony well advanced and some of them had flown from their nests. Continuing northward, on July 9 we passed near a cliff in Port Manvers Run where two pairs of Glaucous Gulls were nesting in shallow niches of the rock not more than ten feet above the surface of the water. Each nest contained young which appeared to be about a day old. A month later, August 10, when we passed the same rock, the young gulls frightened by the nearness of the boat made their initial flight. They flew varying distances not exceeding a few hundred yards and alighted clumsily on the surface of the water amidst a great demonstration on the part of the adult birds.

On July 12 several Glaucous Gulls were seen off Cape Chidley and on July 13 about fifty individuals were noted in Gray Straits. July 17 we saw eight Glaucous Gulls circling high over a fiord northeast of Port Burwell. A search of the cliffs nearby revealed a nest containing young about two-thirds grown with the juvenal plumage well established.

The Glaucous Gull was a very common bird at the Buttons. In addition to the large numbers seen flying and feeding about the islands, a large breeding colony was discovered July 25 on the cliffs of Lawson Island. These gulls were very aggressive in their attacks upon the Ravens which were also common inhabitants of the islands.

On our return trip along the Labrador coast flocks comprising adult and young Glaucous Gulls were common. In many instances the young exhibited very little fear of man and allowed us to approach very near to them. At Nain we saw immature birds perched on the occupied houses of the Eskimo village where natives frequently passed within a few yards of them. August 21 several migrating individuals were seen at Henley's Harbor.

The following birds were collected:

Number	Sex	Place	Date	Length	Extent	Weight
						in grams
1038	female	Anaktalak Bay	July 8	(Young one day old)		
1136	female	Bowdoin Harbor	July 29	666	1497	1412
1137	male	Bowdoin Harbor	July 29	740	1620	1948
1179	male juv.	Anaktalak Bay	Aug. 12	620	1400	1451
1180	male juv.	Anaktalak Bay	Aug. 12	620	1355	1484
1181	male juv.	Anaktalak Bay	Aug. 12	598	1325	1475
1182	female juv.	Anaktalak Bay	Aug. 12	575	1265	1073

ICELAND GULL, *Larus leucopterus* Vieillot.—On July 15 a gull shot from a flock of five near Cape Chidley proved to be a female Iceland Gull. The ovaries were very large and the worn plumage especially the wing and tail indicated that it was a nesting bird. It weighed 644 grams. The identification of this bird was verified by the Museum of Comparative Zoology.

GREAT BLACK-BACKED GULL, *Larus marinus* Linnaeus.—The Black-backed Gulls were abundant along the north shore of the Gulf of Saint Lawrence and the southern Labrador coast. The birds generally nest in isolated pairs, often a single pair to an island, but one of the Gannet Islands proved an exception. When we passed this island on July 3 there was an estimated number of eight hundred pairs of these birds nesting there. At a distance it had the appearance of a Herring Gull colony but as we neared the island the true identity of the birds was revealed. On our return August 19 we landed on the island and in a very short time located nearly two hundred nests. In a spot near the center of the island there were seven occupied Black-backed Gulls' nests in an area fifty paces square. Most of the nests at that time were deserted. There were many young, most of them in advanced stages of growth and capable of flight. From one vantage point I counted 175 juvenal Black-backed Gulls some of them flying above the island with the adults. This is the greatest concentration of nesting Black-backed Gulls I have ever experienced. It is contrary to the usual nesting habits of the species.

On July 5 we found one or more pairs nesting on each of five islands near Hopedale and on July 7 many isolated pairs were nesting on small islands south of Nain. Eider Ducks nested on some of the islands occupied by the Black-backed Gulls. We saw six of these gulls at Port Manvers but no nests were found at that place.

We found a pair nesting at Eclipse Harbor near the 60th parallel on August 6. This is our most northern record of the nesting of this species. The young were about half grown. Large flocks containing many young were seen in the vicinity of Turnavik West and the Red Islands on August 15-16. On July 18 we found on Puffin Island near Indian Harbor about twenty young of various ages, ranging from downy stages to others able to fly. From Melville Sound southward the Black-backed Gulls were common. The following specimens were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1045	male	Port Manvers	July 9	—	—	1724
1188	female im.	Turnavik West	Aug. 15	625	1350	1545
1190	female im.	Turnavik West	Aug. 15	648	1372	1464
1218	? im.	Turnavik West	Aug. 15	650	1380	1466

HERRING GULL, *Larus argentatus smithsonianus* Coues.—The Herring Gull was the most abundant species of gull from the coast of Maine to Nain, Labrador. On July 5 we found them nesting on islands off Hopedale and July 7-8 we visited several colonies in the vicinity of Nain. All of the nests examined contained eggs at that date. North of Nain we saw fewer Herring Gulls and no nesting colonies were discovered beyond Port Manvers Run. One adult was collected from a flock of five at the eastern end of Grenfell Tickle on August 4, which was our most northern record of the Herring Gull. 1156—male, adult, Grenfell Tickle, Aug. 4; length 630; extent 1465; weight in grams 557.

KUMLIEN'S GULL, *Larus kumlieni* Brewster.—A female Kumlien's Gull was collected at the eastern end of Grenfell Tickle, Labrador, on August 4.

This gull was first recognized and described by William Brewster¹ in 1883. The A. O. U. Committee on the basis of the evidence presented in Jonathan Dwight's 'The Gulls of the World'² considered Kumlein's Gull a hybrid between *Larus leucopterus* Faber and *Larus argentatus thayeri* Brooks and therefore not entitled to

¹ Brewster, William. Bull. Nuttall Ornith. Club, vol. 8, p. 216, 1883.

² Dwight, Jonathan, Jr. Bull. Amer. Mus. Nat. Hist., vol. 52, p. 254, 1925.

specific recognition. It was accordingly placed on the hypothetical list of the 1931 Check-list. P. A. Taverner,¹ however, has since that time accumulated much evidence contrary to Dwight's view. He has shown conclusively that *Larus kumlieni* cannot be a hybrid between *thayeri* and *leucopterus* and presents other facts which make it plausible that *Larus kumlieni* should be reinstated as a species.

1158—female, Grenfell Tickle, Aug. 4; length 592; extent 1358; wing 410; weight in grams 557. Iris straw yellow; eye ring black; bill dark; feet pale flesh color; nails slate color.

BLACK-HEADED GULL, *Larus ridibundus ridibundus* Linnaeus.—When our expedition stopped at Makkovik, Mr. Anton Anderson, a native fisherman, gave me a specimen of a Black-headed Gull which he stated, was taken at Stag Bay, Labrador, during September, 1933. The exact date was not recorded, hence only an approximation can be given. This specimen establishes a new record for the coast of Labrador, while of added interest is an elongated aluminum tag attached to the leg above the tarsal joint, with the notation "Cogels Ossendrecht Holland 851." This gull was banded as an immature by Mr. Joseph Cogels, at Groote Meer near Ossendrecht on June 21, 1932. Ossendrecht is situated on the Escaut River near the Belgian frontier, about 72 kilometers from the village of Bergen op Zoom in the province of North Brabant, southern Holland.² This is the second record for the continent of North America; the other record³,⁴ is of one taken at Newburyport, Massachusetts, on January 27, 1930.

BONAPARTE'S GULL, *Larus philadelphia* (Ord).—During our stop at Grindstone Island of the Magdalens, June 22–23, many Kittiwakes and Herring Gulls frequented the vicinity of the wharf. On June 23 six Bonaparte's Gulls made their appearance and were observed for a considerable time as they fed with the other gulls on the fish refuse thrown out by the fishermen. One of the birds still in winter plumage was collected. These birds were evidently late stragglers in the migration to the nesting grounds in the Northwest. 1013—sex?, Magdalen Islands, June 23; length 344; weight 201 grams; iris dark brown; feet pale pinkish white, nails black.

ATLANTIC KITTIWAKE, *Rissa tridactyla tridactyla* (Linnaeus).—Kittiwakes were abundant about the Magdalens June 22–23. On June 24 we visited Bird Rock where the birds were in the midst of their nesting. All of the nests examined contained eggs. There are probably a thousand pairs of Kittiwakes nesting on Bird Rock but due to an impending storm we were forced to leave before a detailed census could be made.

Kittiwakes were common along the Canadian Labrador and on June 27 were extremely abundant between the Straits of Belle Isle and Battle Harbor. Flocks of from twenty-five to fifty were common and in places where the fishing was good, concentrations of five hundred to a thousand birds were noted. On July 3 we also saw immense flocks at North Shoal Bay beyond Indian Head. There were about two hundred of them circling over the hills at Harvey Harbor but we found no evidence of their nesting in northern Labrador. On July 22, during a dense fog we counted and estimated a thousand Kittiwakes in the course of about ten miles in the vicinity of Cape Chidley. On July 23 hundreds of Kittiwakes were seen in Gray Straits between Port Burwell and the Buttons. There were immense rafts of Kittiwakes resting on the surface of the ocean off the end of Lacy Island of the Buttons on July 28 and on the same day we noted a great concentration of them on the high

¹ Taverner, P. A. Canadian Field-Naturalist, vol. 47, pp. 88–90, 1933.

² Gross, Alfred O. Bird Banding, vol. 6, pp. 24–25, 1935.

³ Emilio, S. G., and Ludlow Griscom. Auk, vol. 47, p. 243, 1930.

⁴ MacCoy, C. V. Bull. Boston Soc. Nat. Hist., no. 55, p. 21, 1930

cliffs of Goodwin Island where it was evident the birds were nesting. Excessive tide rips and the high inaccessible cliffs made it impossible to get near enough actually to see the nests. There were always a few, sometimes hundreds, of Kittiwakes fishing in the channel between Lawson and Lacy Islands, just in front of our camp.

On July 31 Commander MacMillan reported the discovery of a very large colony of Kittiwakes on one of the smaller islands of the Knight group near the Buttons. Hence the large numbers which are to be seen about Cape Chidley and in the Straits are inhabitants of the Knight and Button groups of islands. No other colonies have thus far been reported in that region. The Eskimos questioned, knew nothing of any nesting places of Kittiwakes on the mainland of northern Labrador.

On August 4 large numbers of Kittiwakes were seen at the eastern end of Grenfell Tickle. About 350 were seen fluttering and diving about a partially submerged reef between Lady Bight Harbor and Port Manvers Run on August 10. There was also a concentration of Kittiwakes in upper Port Manvers Run. On August 17 large flocks of several hundred each were seen on the way to Indian Harbor. On August 21 they were common at Henley's Harbor; August 26 several were noted in Bras d'Or Lakes; August 28 one was in the harbor at Port Hawkesbury and on August 31 several came near the "Bowdoin" when we were off the coast of Maine, indicating that the migration of the Kittiwakes was under way.

The following specimens were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1105	female	Port Burwell	July 21	410	961	328.7
1113	male	Cape Chidley	July 22	415	942	328
1120	female	Cape Chidley	July 22	415	962	361.4
1121	female	Cape Chidley	July 22	400	912	358
1153	?	Grenfell Tickle	Aug. 4	390	982	365
1154	male	Grenfell Tickle	Aug. 4	425	1020	336

Food found in the stomachs of the above specimens consisted of squids and small crustaceans.

COMMON TERN, *Sterna hirundo hirundo* Linnaeus.—Common Terns were abundant from the Maine coast to the north shore of the Saint Lawrence. Many were seen June 22-23 at the Magdalen Islands where they breed. A male was collected on Alright Island, June 23. The only definite Newfoundland Labrador records we obtained were of several Common Terns which came near the "Bowdoin" when we were anchored at Assisez Island near Battle Harbor on July 2.

Since the two species of terns are difficult to differentiate in the field, except under favorable conditions, some of those seen to the northward and recorded as Arctic Terns may have been Common Terns. However, all specimens collected north of Battle Harbor were *paradisaea*.

ARCTIC TERN, *Sterna paradisaea* Brünnich.—The Arctic Tern was common along the Labrador coast from the Straits of Belle Isle to Cape Chidley and the Button Islands. The greatest concentration of these terns, according to our observations, was in the region between the 55th and 56th parallel where the most important breeding colonies are located. On August 15-16 we visited the breeding colonies on Jock's and Red Islands in the vicinity of Turnavik West. We banded about three hundred young the majority of which were from two to three weeks old but others ranged from young freshly hatched to others able to fly. A few nests contained eggs freshly laid. This wide variation in the state of nesting of the terns is due in part to the frequent eggng to which these colonies are subjected.

On the Red Islands we found a dead tern the remains of which indicated that the bird had died or been killed a relatively short time before our visit on August 16. On the tarsus was a band number 548131 of the United States Biological Survey. This band was placed on a nestling by Dr. Oliver L. Austin, Jr., when he visited the islands on July 23, 1928.¹

The following Arctic Terns were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1116	female ad.	Port Burwell	July 21	356	753	94.1
1125	male ad.	Port Burwell	July 21	370	745	98.2
1208	male im.	Jock's Island	Aug. 16	104	115	13.4
1209	female im.	Jock's Island	Aug. 16	110	128	11.9
1210	male im.	Red Islands	Aug. 15	176	368	79.9
1211	? im.	Jock's Island	Aug. 16	220	518	115.1
1212	male im.	Jock's Island	Aug. 16	265	590	128.1
1213	? im.	Jock's Island	Aug. 16	276	635	102.9
1214	? im.	Jock's Island	Aug. 16	301	689	94.8
1215	female im.	Jock's Island	Aug. 16	281	630	96.3
1216	male ad.	Red Islands	Aug. 16	375	770	95.2
1217	male ad.	Red Islands	Aug. 16	381	790	108.9

Small fish constituted the whole of the food eaten by the adults and young birds collected.

RAZOR-BILLED AUK, *Alca torda* Linnaeus.—Nests of the Razor-billed Auks contained eggs when we visited Bird Rock on June 24. Auks were common along the north shore of the Gulf of Saint Lawrence, June 25-26. On July 6 a few were found nesting on islands off Hopedale. July 15 three were seen in an inlet near Port Burwell but none was seen in the Straits nor at the Button Islands. On August 17 we visited Tinker Island, where numbers have been reported as nesting in the past, but none was to be seen. August 19 we found about three hundred pairs nesting on the Herring Islands. All nests examined contained young. On the same day we found several hundred pairs nesting on one of the Gannet Islands. About a dozen pairs were nesting on Puffin Island near Indian Harbor at the time of our visit on August 18.

The following specimens of Razor-billed Auks were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
1224	female im.	Gannet Islands	Aug. 19	248	342	195.6
1225	female ad.	Gannet Islands	Aug. 19	431	723	683.0
1227	female im.	Gannet Islands	Aug. 19	170	180	107.8
1233	male im.	Gannet Islands	Aug. 19	219	295	158.0

ATLANTIC MURRE, *Uria aalge aalge* (Pontoppidan).

BRÜNNICH'S MURRE, *Uria lomvia lomvia* (Linnaeus).—No attempt was made to identify the Atlantic and the Brünnich's Murre in the field except at the nesting colonies where the birds could be seen at close range. On June 22-23 murre were common at the Magdalen Islands. On June 24 both Atlantic and Brünnich's Murres were nesting at Bird Rock. Many murre were seen along the north shore of the Gulf of Saint Lawrence where, according to Prof. R. A. Johnson, only the Atlantic Murre is represented. Brünnich's Murres were nesting on several of the islands in

¹ Gross, Alfred O. *Bird Banding*, vol. 6, pp. 23-24, 1935.

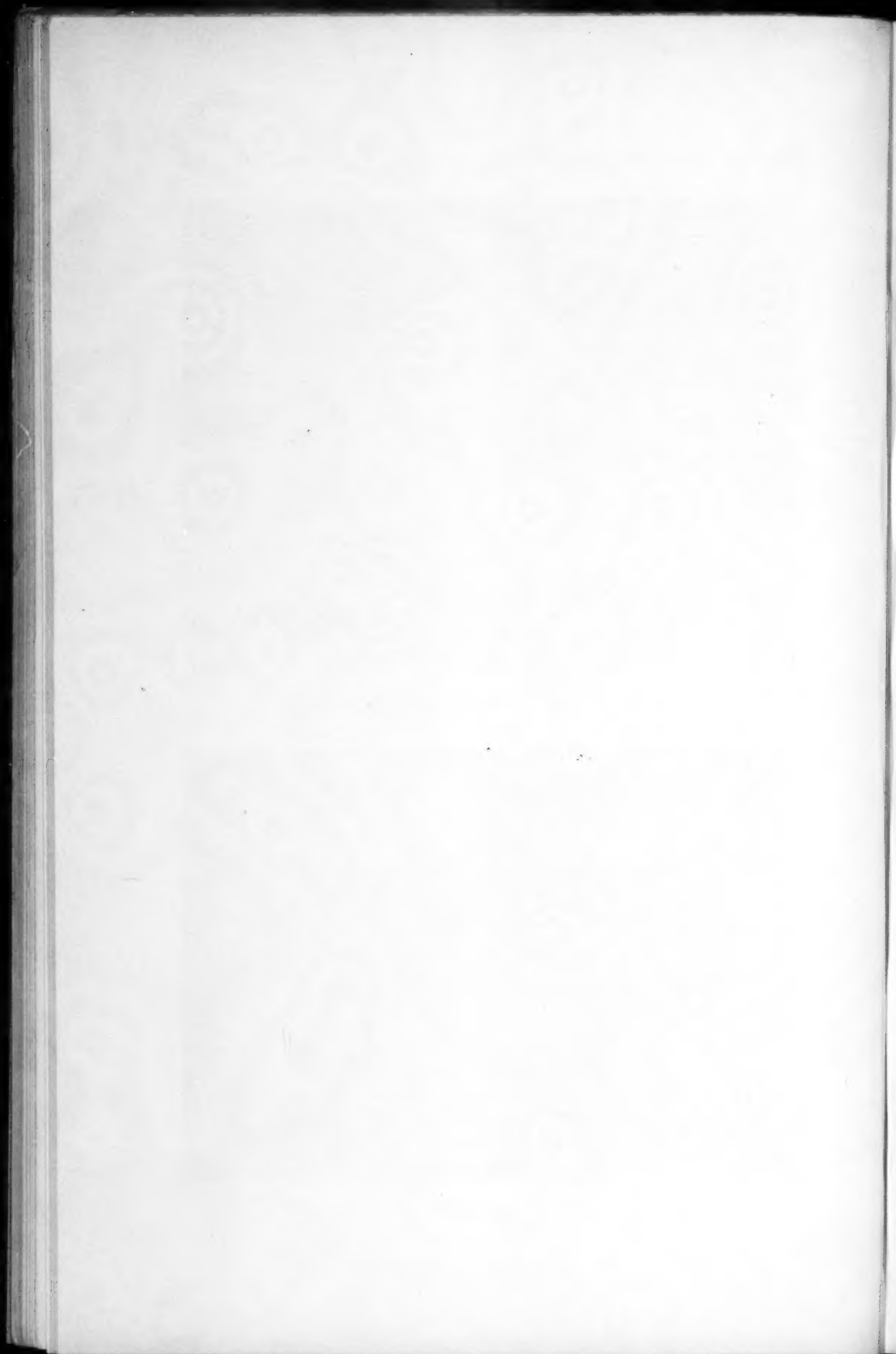


NEST AND EGGS OF NORTHERN EIDER NEAR HOPEDALE



NORTHERN HORNED LARK INCUBATING ITS FOUR EGGS





the vicinity of Hopedale on July 6. On July 11 about fifty murre were seen in a number of small flocks near the entrance of Grenfell Tickle and on July 14 about a dozen in Gray Straits. July 15-18 Brünnich's Murres were present in large numbers at Port Burwell, Ungava Bay, where we collected five specimens. On July 23 fifteen murre were noted while we were crossing Gray Straits to the Button Islands and on July 29 I saw a large raft of them on the sea off Lacy Island of the Button group. Although Brünnich's Murres undoubtedly breed in northern Labrador and on the Button Islands, we were unable to find their nests. They probably breed on some of the large number of inaccessible cliffs. The gonads of the birds collected were very large, the testis averaged 10 x 30 mm. and the ovaries contained ova 4 to 10 mm. in diameter, indicating that the birds were sexually active at the time of our visit.

On the return trip we saw many murre along the northern Labrador coast between Eclipse Harbor and Cape Mugford, August 6-9. An unusually large number was seen in the vicinity of the Herring Islands on August 19.

The following five Brünnich's Murres were collected at Port Burwell, Ungava Bay, Province of Quebec:

Number	Sex	Date	Weight in grams
1064	male	July 15	907
1065	female	July 15	918
1066	male	July 15	1008
1067	female	July 18	862
1077	male	July 18	887

Fish and shrimp constituted the chief food of the birds collected.

DOVEKIE, *Alle alle* (Linnaeus).—Remains of the Dovekie were found on the Button Islands, killed by Arctic Foxes or other predators. It is evidently very abundant on these islands during the migration.

BLACK GUILLEMOT, *Cepphus grylle* Linnaeus.—The Guillemot of the northern Labrador coast has been assigned to the race *arcticus*, an intergrade between *mandti* and *grylle* by Dr. Oliver L. Austin, Jr.¹ He gives the breeding range on the western side of the North Atlantic as follows: "*Cepphus grylle grylle*, from Matinicus Rock, Maine, northward and eastward to Cape Whittle, Labrador, and the 50th parallel of latitude in Newfoundland; *Cepphus grylle arcticus*,² from Hamilton Inlet, Labrador, northward to the 72nd parallel of western Greenland; *Cepphus grylle mandti* from the 75th parallel of latitude in Ellesmere Island and western Greenland northward." The areas between the above regions, according to Austin, are places wherein birds of either race bordering them have been taken or may be expected or are of uncertain occurrence. Not all ornithologists agree that *arcticus* is a valid form and personally I would rather see fewer than more races recognized unless there is a very good reason for it. The chief difference between *mandti* and *grylle* is the relative amount of white on the outer primaries and the amount of black at the base of the white greater secondary coverts. In *mandti* the latter are entirely white and the white patches on the primaries are more extensive. The race *arcticus* represents an intermediate condition. There are also minor differences in size and shape of the bill and in certain measurements but these are not constant. As a matter of fact

¹ Austin, Oliver L., Jr. Bull. N. E. Bird Banding Association, vol. 5, pp. 1-6, 1929.

² Austin, Oliver L., Jr. The Birds of Newfoundland Labrador. Memoirs Nuttall Ornithological Club, no. 7, pp. 136-139, 1932.

³ Brehm, C. L. Naturgeschichte aller Vögel Deutschlands, pp. 987-992, 1831.

the markings of the coverts and primaries show intergradations in specimens taken from the same locality. Although Austin limits the range of *grylle* eastward from the Gulf of Saint Lawrence to Cape Whittle and the 50th parallel in Newfoundland, I collected typical *grylle* as far north as the 56th parallel. All specimens collected at Turnavik, Perret Island and Hopedale, as well as three specimens from Chateau Bay and five specimens from Webeck Harbor obtained by the Bowdoin Expedition of 1891,¹ cannot be distinguished from Maine birds. Birds collected on the Labrador Peninsula north of the 56th parallel are intermediate between *grylle* and *mandti* and can be designated as *arcticus* if this race is recognized.

Certain specimens taken on the Button Islands represent the race *arcticus* but with characters approaching those of *mandti*. One male bird collected on the Buttons has all of the characters of *mandti* and hence on these islands both *arcticus* and *mandti* are represented in the same breeding colonies. This condition as well as the intergradations of the forms tends to weaken the importance of the race *arcticus*. More material is needed to solve this problem definitely.

The Guillemot is the most successful and most abundant and widely distributed of the alcids along the Labrador coast. We found breeding colonies at almost every stop not only on the outer islands but also in favorable places well into the fiords and inlets. Most of the colonies are small, not exceeding a hundred pairs, but at Perret Island (not named on the charts) near Zoar Bay, which we visited on August 14, there were at least two thousand pairs, the largest number of Guillemots I have ever seen in one colony. Perret Island with its numerous small caves and deep crevices as well as immense talus slopes of large boulders and masses of stone blocks along its high cliffs, is ideal for the nesting Guillemots. Although it was the middle of August there were still a considerable number of nests with eggs, probably second and third attempts after the sets had been taken or destroyed. Other nests contained young, many of which were in the natal-down stage. A few young were advanced in growth with the juvenal plumage complete. From a concealed place in one of the many caves I counted 875 birds that were swimming and diving in front of the island at one time. Some of the birds were carrying small fish or eels intended for the young; others were playing and in two instances the nuptial performance including copulation was observed. It would seem that these late attempts at nesting would fail to be successful.

Some of the adult Guillemots collected were in a state of moult representing various mottled conditions between nuptial and winter plumages. In the case of two of the birds, a male and female, collected July 17 and 19 respectively, there were many worn feathers, remnants of the preceding winter plumage. These birds were probably weakened individuals in which the prenuptial moult had been greatly delayed or else were very late birds of the preceding nesting season.

The following specimens of Guillemots were collected:

Number	Sex	Place	Date	Length	Extent	Weight in grams
<i>Adults</i>						
1033	male	Hopedale, Lab.	July 6	—	—	429
1034	?	Hopedale, Lab.	July 6	—	—	404
1050	male	Bowdoin Harbor	July 12	—	—	398
1051	female	Bowdoin Harbor	July 12	—	—	404
1052	female	Bowdoin Harbor	July 12	—	—	420
1056	female	Cape Chidley	July 12	—	—	430

¹ Norton, Arthur H. Proc. Portland Soc. Nat., Hist. vol. 2, pp. 139-158, 1901.

Number	Sex	Place	Date	Length	Extent	Weight in grams
<i>Adults—Continued</i>						
1057	female	Cape Chidley	July 12	—	—	441
1070	female	Port Burwell	July 17	—	—	357
1078	male	Port Burwell	July 19	—	—	445
1115	male	Port Burwell	July 21	—	—	450
1127	male	Lacy Id., Buttons	July 29	330	584	446
1128	female	Lacy Id., Buttons	July 29	335	566	467
1133-a	female	Lacy Id., Buttons	July 30	338	755	401
1135	male	Bowdoin Harbor	July 29	334	568	418
<i>Young</i>						
1185	male	Perret Island	Aug. 14	180	185	88.7
1186	female	Perret Island	Aug. 14	185	228	105.8
1219	male	Turnavik West	Aug. 16	270	451	234
1220	male	Turnavik West	Aug. 16	270	438	263.8
1234	female	Henley Harbor	Aug. 21	329	538	307

The stomach contents of the Guillemots collected consisted entirely of fish.

ATLANTIC PUFFIN, *Fratercula arctica arctica* (Linnaeus).—Puffins were nesting at Bird Rock on June 24. The few nests examined contained eggs. Puffins were common along the north shore of the Gulf of Saint Lawrence and southern Labrador as far north as Hopedale. On August 18 we found about five hundred pairs breeding on Puffin Island near Indian Harbor, Labrador. The larger number of the nests were among large boulders and blocks of stone but a considerable number of them were in excavated burrows. All of the nests examined contained young, most of them in natal plumage. Puffins were also nesting in large numbers on the Herring Gull Islands and the Gannet Islands. No Puffins were seen north of Hopedale.

The following specimens were collected:

Number	Sex	Age	Place	Date	Length	Extent	Weight in grams
1221	female	im.	Puffin Island	Aug. 18	215	345	253
1222	female	ad.	Puffin Island	Aug. 18	315	591	441
1223	male	ad.	Puffin Island	Aug. 18	—	—	453.7
1228	male	ad.	Gannet Islands	Aug. 19	330	631	484
1229	male	im.	Gannet Islands	Aug. 19	240	430	259
1230	male	ad.	Gannet Islands	Aug. 19	—	—	485
1231	male	ad.	Gannet Islands	Aug. 19	350	585	476
1232	male	im.	Gannet Islands	Aug. 19	191	225	114

RUBY-THROATED HUMMINGBIRD, *Archilochus colubris* (Linnaeus).—Two hummingbirds were seen at Port Hawkesbury, Nova Scotia, on June 21. When I stopped at Saint Anthony, northern Newfoundland, July 19, 1932, I saw a male hummingbird among the flowers near the Grenfell Mission. I was informed that it nested in the vicinity but I was unable to verify this statement.

EASTERN BELTED KINGFISHER, *Megaceryle alcyon alcyon* (Linnaeus).—Several kingfishers were seen at Port Hawkesbury, Nova Scotia, on June 20. A pair was nesting in the red-clay cliffs of Amherst Island of the Magdalens on June 22. No kingfishers were seen on the Labrador coast.

AMERICAN THREE-TOED WOODPECKER, *Picoides tridactylus bacatus* (Bangs).—Four American Three-toed Woodpeckers were seen and a female was collected in a growth of spruces near Commander MacMillan's Station near Nain, Labrador, on August 12. Specimen number 1173: length 202; extent 350; and weight 50.9 grams.

NORTHERN HORNED LARK, *Otocoris alpestris alpestris* (Linnaeus).—The Northern Horned Lark is a common nesting bird all along the Labrador coast. Contrary to the reports of certain observers, it was very abundant in the extreme northern end of the Labrador Peninsula. It was the commonest bird at Port Burwell in spite of the fact that the Eskimos killed large numbers of them for food. On a tramp over the hills from Port Burwell toward Cape Chidley, I saw more than a dozen young Horned Larks, which were just out of their nests. It was also a common nesting species on the Button Islands.

The crop and stomach contents of the specimens collected consisted of gravel, small pieces of mollusk shells, numerous insects and a small amount of vegetable matter.

The following specimens of Northern Horned Larks were collected:

Number	Sex	Age	Place	Date	Weight in grams
1068	male	im.	Port Burwell	July 17	20.4
1069	female	ad.	Port Burwell	July 17	37.5
1075-a	male	ad.	Port Burwell	July 17	43.2
1075-b	female	ad.	Port Burwell	July 17	35.8
1075-c	male	ad.	Port Burwell	July 17	39.9
1080	male	im.	Port Burwell	July 19	18.2
1089	male	ad.	Port Burwell	July 20	—
1168	female	ad.	Eclipse Harbor	Aug. 6	39.4

PRAIRIE HORNED LARK, *Otocoris alpestris praticola* Henshaw.—There were many Prairie Horned Larks along the sandy beaches of the Magdalens. Two males were collected on Alright Island, June 23. None was seen on the Newfoundland Labrador coast.

BANK SWALLOW, *Riparia riparia riparia* (Linnaeus).—Two flourishing colonies of Bank Swallows were seen in the high red-clay cliffs of the Magdalen Islands. These cliffs provide ideal nesting sites for this species. There was a large colony of Bank Swallows on the banks of the Moisie River, Canadian Labrador, which I visited during July 1931.

BARN SWALLOW, *Hirundo erythrogaster* Boddaert.—The Barn Swallow was common at the Magdalens, June 20–23. When we stopped at Hopedale, Labrador, an Eskimo boy gave us a preserved male Barn Swallow which he collected May 15, 1934. The native told us that two pairs of the birds nested in an uninhabited fisherman's hut near Hopedale, where the specimen was secured. The factor of the Hudson Bay Post at Port Burwell informed us that a pair of Barn Swallows nested in the vacated Mission buildings at Killineck during the two preceding years. There was no evidence of the bird's nesting when we visited the building's July 15, 1934.

LABRADOR JAY, *Perisoreus canadensis nigricapillus* Ridgway.—When we were at Nain, Labrador, August 10, a Labrador Jay persisted in feeding about the Eskimo houses. The dogs made frequent futile attempts to capture it whenever it flew to the ground to pick up bits of food. On July 12 an adult female specimen was collected at Commander MacMillan's Station near Nain. The measurements of this specimen were: length 281 mm.; extent 402 mm.; and weight 74.5 grams.

NORTHERN RAVEN, *Corvus corax principalis* Ridgway.—The Northern Raven was a common bird along the entire coast of Labrador, but according to our experience was more abundant in the northern part of the peninsula. Flocks numbering from three or four to a dozen individuals were seen daily during our stay at Port Burwell and the Button Islands. No occupied nests were found.

EASTERN CROW, *Corvus brachyrhynchos brachyrhynchos* Brehm.—Crows were common at the Magdalens and along the north shore of the Gulf of Saint Lawrence. None was seen on the Newfoundland Labrador coast.

ACADIAN CHICKADEE, *Penthestes hudsonicus littoralis* (Bryant).—A female Acadian Chickadee was collected at Commander MacMillan's Station near Nain, Labrador. Its length was 128 mm., extent 189 mm., and weight 11.1 grams.

RED-BREASTED NUTHATCH, *Sitta canadensis* Linnaeus.—A Red-breasted Nuthatch was seen climbing about the supports of the steps leading to the top of Bird Rock on June 24.

EASTERN ROBIN, *Turdus migratorius migratorius* Linnaeus.—A Robin was collected and others were seen at the Magdalen Islands on June 22. A nest containing five eggs was found June 27 near the radio station at Battle Harbor. July 1, six Robins were at Assisez Island and on the following day several were seen at Sophia Harbor. On July 5 one was seen at Aillek Bay. At Hopedale a nest and three young were found near the Mission. While climbing a cliff at Port Manvers on July 9 I flushed a Robin from a nest built on a shelf of rock situated in a shallow cave. The nest, of the usual structure of mud and grasses, contained two eggs. The parent bird was extremely wild and made no attempt to return to the nest as long as I remained in the vicinity. A Robin was seen several times at Port Burwell during our stay July 15–22. The men at the Hudson's Bay Post stated that a Robin nested on the cliff between the Post and Killineck the year before. On August 12 three flocks of Robins were seen at Nain, Labrador, where they were concentrating before the autumn migration.

AMERICAN PIPIT, *Anthus spinoletta rubescens* (Tunstall).—Two nests of the American Pipit, each containing five eggs, were found near Battle Harbor on Battle and Caribou Islands, respectively. The Pipit was very common, being noted at nearly all of the stops along the Labrador coast. On July 15 we found a nest containing six eggs, at Port Burwell. Two days later the eggs hatched. On July 28 a nest containing five young was found at the eastern end of Lacy Island of the Buttons. During our stay we saw Pipits in various parts of the islands. They were not restricted to the valleys of the lowlands but were also seen on the plateaus of the highest hills. By the end of July we found many young capable of extended flights. On our return trip down the coast small flocks of Pipits were seen, indicating that family groups had united and that migration was under way.

The following specimens of Pipits were collected:

Number	Sex	Place	Date	Weight in grams
1018	female	Battle Harbor	June 29	24.1
1049	female	Cape Chidley	July 12	23.9
1062-a	male	Port Burwell	July 15	24.0
1062-b	male	Port Burwell	July 17	21.1
1062-c	male	Port Burwell	July 17	20.8
1079	?	Port Burwell	July 19	20.5
1145	male	Button Islands	July 30	16.0
1169	female	Cape Mugford	Aug. 9	19.2
1204	female	Turnavik West	Aug. 15	22.6
1205	male	Turnavik West	Aug. 16	21.4

STARLING, *Sturnus vulgaris vulgaris* Linnaeus.—A nest of the Starling containing three nearly grown young was found in a deserted woodpecker's nest near Port Hawkesbury, Cape Breton Island, on June 20. According to persons living in the vicinity, the birds first made their appearance in the region during the summer of 1932.

EASTERN YELLOW WARBLER, *Dendroica aestiva aestiva* (Gmelin).—A male was collected June 22 at the Magdalen Islands. Two others were seen.

MYRTLE WARBLER, *Dendroica coronata* (Linnaeus).—A male was collected near Commander MacMillan's Station near Nain, Labrador, on August 12. This specimen weighed 14.4 grams. Five others were seen at the Station.

BLACK-POLL WARBLER, *Dendroica striata* (Forster).—Eight were seen and one male was collected at Mecatina Island on June 28. A female in juvenal plumage was collected August 12 at Nain, Labrador. The weights of the above specimens were 12.7 and 11.5 grams, respectively.

BRONZED GRACKLE, *Quiscalus quiscula aeneus* Ridgway.—Seven were seen on Grindstone Island of the Magdalens and four were noted on top of Bird Rock, June 24.

COMMON REDPOLL, *Acanthis linaria linaria* (Linnaeus).—A female weighing 13.2 grams was collected from a flock of seven at Hopedale, Labrador, on July 5. Several Common Redpolls were seen at Commander MacMillan's Station on August 11 and on the following day five were observed in the spruce woods near the village of Nain.

EASTERN SAVANNAH SPARROW, *Passerculus sandwichensis savanna* (Wilson).—The Savannah Sparrow was the commonest land bird at the Magdalens. In a single trip the length of one of the islands I counted 38 individuals. They were in grassy areas of both the high and the low lands. A nest and four eggs was found June 22 and on June 23 two nests, one containing five eggs and the other four young, were found on Amherst Island. A male specimen was collected on June 22.

LABRADOR SAVANNAH SPARROW, *Passerculus sandwichensis labradorius* Howe.—The Savannah Sparrows of the Newfoundland Labrador coast have been recognized as the subspecies *labradorius*. However, not all ornithologists are in agreement that this is a valid form.

On June 28 a nest with five eggs of the Savannah Sparrow was found in a grassy area near the center of Battle Island, Battle Harbor. The combined weight of the five eggs was 11.3 grams or an average of 2.26 grams per egg. Several Labrador Savannah Sparrows were seen on Assisez Island, July 1, but none was observed northward of this region. A female, no. 1019, weighing 18.8 grams, was collected at Battle Harbor, June 29. This specimen is similar to southern forms and does not support the recognition of *labradorius*.

SLATE-COLORED JUNCO, *Junco hyemalis hyemalis* (Linnaeus).—A male and a female were collected at Nain, Labrador, on August 12. The birds weighed 22.4 and 17.7 grams, respectively.

WHITE-CROWNED SPARROW, *Zonotrichia leucophrys leucophrys* (Forster).—This is a common nesting bird along the Labrador coast. We observed them at Battle Harbor, Assisez Island, Turnavik West, Aillek Bay, Hopedale, Makkovik, Nain, Windy Tickle, Grenfell Tickle, and they were especially abundant at Port Burwell. This sparrow seems to favor situations near the habitations of man and during the nesting season is less likely to be found in isolated places such as the Button Islands.

The height of the breeding season of the White-crowned Sparrow on the Labrador coast is during the first two weeks of July. A female taken at Battle Harbor, June 29,

had a fully formed egg in her oviduct ready to be laid. On July 18 at Killineek we collected a fully feathered brood of young capable of flight.

The following specimens were collected:

Number	Sex	Age	Place	Date	Length	Extent	Weight in grams
1014	male	ad.	Mecatina Island	June 25	—	—	32.5
1016	male	ad.	Mecatina Island	June 25	—	—	31.0
1020	female	ad.	Battle Harbor	June 29	163	238	33.4
1071	female	juv.	Port Burwell	July 18	101	180	17.1
1072	female	juv.	Port Burwell	July 18	103	176	15.9
1073	male	juv.	Port Burwell	July 18	99	179	15.3
1080-a	male	ad.	Port Burwell	July 19	162	239	29.2
1080-b	female	ad.	Port Burwell	July 19	—	—	22.7
1206	male	ad.	Turnavik West	Aug. 16	165	241	30.7
1207	female	ad.	Turnavik West	Aug. 16	164	236	26.9

WHITE-THROATED SPARROW, *Zonotrichia albicollis* (Gmelin).—Several were seen and one was collected at Port Hawkesbury on June 20. Many were seen on islands visited along the north shore of the Gulf of Saint Lawrence but none was noted on the Newfoundland Labrador.

EASTERN FOX SPARROW, *Passerella iliaca iliaca* (Merrem).—Five were seen in a dense growth of spruces near the village of Hopedale on July 5 and several were found in a similar situation near the village of Nain on August 12.

EASTERN SONG SPARROW, *Melospiza melodia melodia* (Wilson).—An adult male Song Sparrow was collected at Port Hawkesbury and several others were seen on June 20. They were common on Amherst and Grindstone Islands of the Magdalens on June 22-23.

EASTERN SNOW BUNTING, *Plectrophenax nivalis nivalis* (Linnaeus).—Our records of the Snow Bunting are limited to the northern end of the Labrador peninsula and the Button Islands. On the northward course we saw them for the first time at Bowdoin Harbor on July 12. Along the side of a deep valley we saw a group of five feeding among the rocks and mosses near the edge of a melting glacier. Also at Bowdoin Harbor we found a nest, containing five young and a sterile egg, located in a narrow cleft of a cliff at a point about fifty feet above the surface of the water. The nest had a substantial foundation of soggy moss, the cup was formed of dried grass stalks and the interior was lined with a mass of white breast feathers of a Rock Ptarmigan. The outside diameter of the nest was 13 cm., the cup had an inside diameter of 6.5 cm. and a depth of 5.4 cm. The egg had a pale-blue ground color, spotted and marked with brown and lavender, size 22 x 16 mm. The five young weighed 24.8 grams or an average of 4.96 grams for each bird. Age about 2-3 days, eyes closed. Natal down gray, distributed in tracts on the crown, nape, scapulars, forewings, femora and a dorsal median tract, mandibles yellow, papillae of primaries and secondaries just appearing through the integument.

Four nests of the Snow Bunting were found in the vicinity of Port Burwell all located in narrow clefts of rocks or cliffs. The structure of these nests was similar to that of the one described above, except one which was lined with caribou hair. Two of the nests contained five young and one sterile egg each, one contained six eggs and the other five eggs. Several broods of Snow Buntings, some just out of the nest and others in more advanced stages of development, were seen during the various trips radiating out from Port Burwell.

The Snow Bunting was one of the commonest land birds found on the Button Islands. Three nests found on the Buttons contained young. At least four other broods were seen which had left their nests and were being fed by the adults.

Although the Snow Bunting is primarily a seed-eating bird at certain seasons of the year, practically all of the food delivered to the young consisted of larvae, flies, mosquitoes, beetles, moths, butterflies and other insects. The crop and stomach contents of the adults consisted of similar food but also contained small quantities of vegetable matter, chiefly leaves of plants. The Buntings were frequently seen about the small freshwater ponds where insect life was most abundant. They were our constant companions around the camp on the Buttons. On August 7 Snow Buntings were seen on the mountains at Sea Plane Cove at an elevation of 1200 feet and on August 9 several were seen at an elevation of 1500 feet on the slopes of Mount Brave.

The following specimens were collected:

Number	Sex	Age	Place	Date	Length	Extent	Weight in grams
1047	female	ad.	Bowdoin Harbor	July 12	—	—	34.0
1048	male	ad.	Bowdoin Harbor	July 12	—	—	32.5
1060	male	ad.	Port Burwell	July 15	—	—	35.4
1061	female	ad.	Port Burwell	July 15	—	—	32.2
1074-b	male	ad.	Port Burwell	July 17	—	—	36.4
1074-c	male	ad.	Port Burwell	July 17	—	—	32.6
1084	female	im.	Port Burwell	July 20	121	211	24.5
1085	female	im.	Port Burwell	July 20	120	214	27.0
1086	male	im.	Port Burwell	July 20	114	205	25.2
1087	male	ad.	Port Burwell	July 20	178	315	33.6
1088	female	ad.	Port Burwell	July 20	167	316	31.9
1090	male	ad.	Port Burwell	July 20	182	326	32.5
1122	female	im.	Lacy Id., Buttons	July 26	130	245	25.8
1123	female	ad.	Lacy Id., Buttons	July 26	162	313	28.6
1124	female	im.	Lacy Id., Buttons	July 26	138	245	25.2
1129	female	im.	Lacy Id., Buttons	July 29	143	251	32.3
1152	male	ad.	Grenfell Tickle	Aug. 3	172	306	33.2

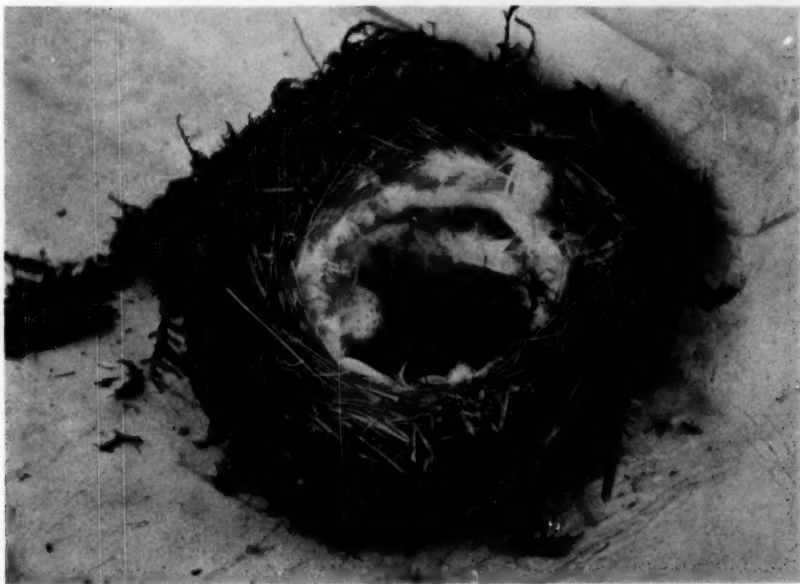
EXTERNAL PARASITES

Bird lice (Mallophaga) were found on twenty-seven species of birds collected by the Bowdoin-MacMillan Arctic Expedition.

Each bird, as soon as it was collected in the field, was placed in a separate paper bag to prevent the lice from transferring to another host. The lice from each bird were preserved in a separate vial of 70% alcohol. Ten genera, including sixteen identified and nine unidentified species of Mallophaga, are represented in the collection. These parasites were present in greatest numbers on the water birds and were especially numerous on some of the gulls and terns. I am indebted to Howard H. Vogel, Jr., a Bowdoin student who was responsible for the collection of Mallophaga as well as all insects obtained by the expedition. We are especially indebted to Mr. Harold S. Peters of the United States Bureau of Entomology for the de-



AMERICAN PIPIT ON ITS NEST IN THE LABRADOR TUNDRA



NEST OF THE SNOW BUNTING REMOVED FROM ITS ROCK CREVICE



terminations of the Mallophaga. The following list of bird hosts and species of Mallophaga was prepared by Mr. Vogel.

<i>Bird host</i>	<i>Species of Mallophaga</i>
Gaviiformes:	
Red-throated Loon, <i>Gavia stellata</i>	<i>Philopterus colymbinus</i> (Denny)
Procellariiformes:	
Atlantic Fulmar, <i>Fulmarus g. glacialis</i>	<i>Ancistrana vagelli</i> (Fabr.) <i>Esthiopterus nigrolimbatus</i> (Giebel) <i>Philopterus occidentalis</i> (Kell.)
Pelecaniformes:	
Gannet, <i>Moris bassana</i>	<i>Pectinopygus bassanae</i> (Fabr.)
Anseriformes:	
Northern Eider, <i>Somateria mollissima borealis</i>	<i>Anatoecus dentatus</i> (Scopoli) <i>Anatoecus obtusus</i> (Giebel) <i>Anatoecus dentatus</i> (Scopoli)
Old-squaw, <i>Clangula hyemalis</i>	
Galliformes:	
Rock Ptarmigan, <i>Lagopus r. rupestris</i>	<i>Menopon striatum</i> (Kellogg) <i>Goniodes mammilatus</i> (Rudow)
Charadriiformes:	
Greater Yellow-legs, <i>Totanus melanoleucus</i>	<i>Actornithophilus</i> sp. <i>Degeeriella austini</i> (Peters) <i>Philopterus</i> sp. <i>Degeeriella actophila</i> (K. and C.) <i>Degeeriella complexiva</i> (K. and C.)
Purple Sandpiper, <i>Arquatella maritima</i>	
White-rumped Sandpiper, <i>Pisobia fuscollois</i>	<i>Degeeriella complexiva</i> (K. and C.) <i>Actornithophilus</i> sp. <i>Degeeriella complexiva</i> (K. and C.)
Least Sandpiper, <i>Pisobia minutilla</i>	
Eastern Dowitcher, <i>Limnodromus g. griseus</i>	<i>Degeeriella</i> sp.
Semipalmated Sandpiper, <i>Ereunetes pusillus</i>	<i>Actornithophilus</i> sp. <i>Degeeriella actophila</i> (K. and C.) <i>Degeeriella complexiva</i> (K. and C.) <i>Philopterus</i> sp. <i>Degeeriella</i> sp. <i>Philopterus gonothorax</i> (Giebel) <i>Philopterus gonothorax</i> (Giebel)
Red Phalarope, <i>Phalaropus fulicarius</i>	
Glaucous Gull, <i>Larus hyperboreus</i>	<i>Philopterus gonothorax</i> (Giebel)
Iceland Gull, <i>Larus leucopterus</i>	<i>Philopterus gonothorax</i> (Giebel)
Great Black-backed Gull, <i>Larus marinus</i>	<i>Philopterus gonothorax</i> (Giebel)
Herring Gull, <i>Larus argentatus smithsonianus</i>	<i>Philopterus gonothorax</i> (Giebel) <i>Philopterus gonothorax</i> (Giebel) <i>Philopterus gonothorax</i> (Giebel) <i>Degeeriella</i> sp. <i>Degeeriella sellata</i> (Burm.) <i>Philopterus</i> sp.
Kumlien's Gull, <i>Larus kumlieni</i>	
Atlantic Kittiwake, <i>Rissa t. tridactyla</i>	
Arctic Tern, <i>Sterna paradisaea</i>	

*Bird host**Species of Mallophaga*

Charadriiformes: (Cont.)

Razor-billed Auk, *Alca torda**Degeeriella alcae* (Denny)Black Guillemot, *Cepphus g. grylle**Philopterus* sp.

Strigiformes:

Snowy Owl, *Nyctea nyctea**Eustrigiphilus ceblebrachys* (Nitz)

Passeriformes:

American Pipit, *Anthus spinoletta rubescens**Philopterus subflavescens* (Geof.)Slate-colored Junco, *Junco h. hyemalis**Degeeriella vulgata* (K.)White-crowned Sparrow, *Zonotrichia l. leucophrys**Philopterus subflavescens* (Geof.)Snow Bunting, *Plectrophenax nivalis nivalis**Philopterus subflavescens* (Geof.)*Bowdoin College,
Brunswick, Maine.*

A CYCLE IN NORTHERN SHRIKE EMIGRATIONS

BY DAVID E. DAVIS

THE problem of periodicity in organisms has been recognized since the beginning of the century. The cycles of several species have been studied in detail. The Northern Shrike (*Lanius borealis borealis*) has attracted attention by its occurrence in New England and adjoining States in large numbers in certain years. Since the species is predatory, a correlation with the well-known cycle of mice (*Microtus* spp., *Dicrostonyx* spp.) was suspected.

The Northern Shrike breeds in the Hudsonian and Canadian zones from northern Ungava south to central Quebec and northern Ontario, probably as far west as York Factory. Westward it intergrades with *Lanius borealis invictus*. It winters southward to New England and in smaller numbers as far as Kentucky, West Virginia and even South Carolina. The food of this shrike consists of small birds and rodents. The animal is killed either by a few blows of the bill on the skull or by shaking. In the winter small birds are the chief source of food but in summer the small rodents and large insects undoubtedly provide food. Birds as large as a Hairy Woodpecker (*Dryobates villosus*) have been caught. Many House Sparrows (*Passer domesticus*) and Starlings (*Sturnus vulgaris*) are killed. On the whole the species is considered as beneficial (Forbush, 1929, p. 176).

I wish to acknowledge the suggestions and help of Dr. Glover M. Allen. Mr. J. C. Greenway, Jr., facilitated the examination of the specimens in the Museum of Comparative Zoology. Mr. Ludlow Griscom suggested the use of the Linnean Society's records.

A thorough examination of the available literature was made for records concerning shrike invasions. It was soon apparent that the Christmas Bird Census in 'Bird-Lore' supplied the only data which could be used to compare one year with another. These records are here presented in a graph showing the number of birds observed per census for each Christmas period. During the first few years the number of censuses is small and hence the data are only indicative. The Maine Ornithological Club conducted a Christmas census during the years 1900-1910. These records are included in the graph. To show that the census actually does indicate the variations in abundance from year to year, the number of Crows (*Corvus brachyrhynchos*) observed was analyzed over a period of years, and, as would be expected, the number of records was very constant.

The Christmas census was examined for records of the Rough-legged Hawk (*Buteo lagopus s. johannis*) and the Goshawk (*Astur atricapillus*). These were, however, too few to be of significance.

The records of the Linnean Society of New York indicate that the shrikes begin to arrive in that region about the first of November and are most abundant in the latter part of the same month. In the spring a few stay as late as April.

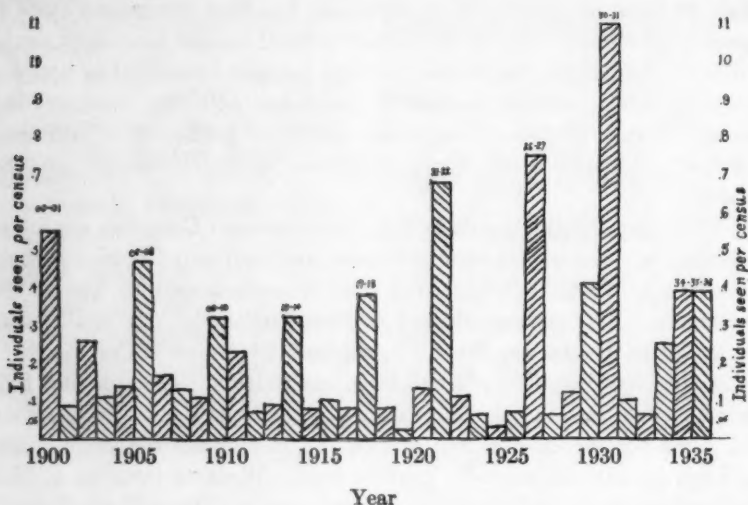


FIG. 1.—Graph showing relative abundance of Northern Shrike in successive years in the Northeast.

The fact that the minima are constant is proof that the maxima are real and are not the result of the interpretation of the data or of the method of making the census. For no matter how many observers were in the field, only a few shrikes were seen in the minimal years.

Several invasions are recorded. Brewster (1906, p. 310) remarks that fifty were shot on the Boston Common in one year. The city hired gunners to protect the recently imported House Sparrows! Shrikes are reported as being abundant in the winter of 1878-79.

The specimens in the collection of the Museum of Comparative Zoology were examined. The ages were distributed as follows: adults; 32.5%; first-year birds, 67.5%; 44.5% were males. Miller (1931) has concluded that the normal winter and spring population of shrikes is 77% of first-year birds. From a comparison of these data it may be concluded that the invasion is not restricted to any particular age group.

Gross (1927), discussing the invasion of Snowy Owls (*Nyctea nyctea*), points out "the strong tendency of the owls, also noted on former migrations, to congregate along the seacoast and, to a lesser degree, the chief river courses." Further, "it is apparent that the owls concentrated on our large

lakes and on the seacoast because of the abundant supply of dead fish, birds, rats, and other food which is found there." The shrikes also were confined to the coasts and rivers. In the 1930 migration sixty-eight of the seventy-one individuals recorded were near a river or the coast. In 1926 none of the records was more than a few miles from the coast or a river. Similarly, in 1917, all the records were on the coast or near rivers. Roberts (1932, p. 162) includes carrion in the food of the shrikes. Thus it seems that the shrikes are attracted to the coasts and rivers for the food found there.

That there is a definite cycle is at once apparent from the graph. The average is 4.2 years. It should be noted that there are two five-year periods and no three-year periods. The winters of maximum abundance are 1900-01; 1905-06; 1909-10; 1913-14; 1917-18; 1921-22; 1926-27; 1930-31; 1934-35. That there was a maximum in the winter of 1900-01 is supported by Brewster (1906, p. 15) who states that shrikes were not seen in 1902, 1903, or 1904, but were rather common in 1901.

The Snowy Owl periodically invades southern Canada and northern United States. Gross (1927; 1931) has recorded two of these invasions. The emigration of 1930-31 was not as large as that of 1926-27, perhaps due to a mild winter. Other invasions are recorded for 1901-02, 1905-06, 1917-18. These dates are either four years or some multiple of four years apart.

The maximum abundance of the Arctic Fox (*Alopex lagopus ungava*) coincides remarkably with the emigration of the owls (Gross, 1931) and the shrikes. The years for maximum numbers of foxes may be determined by the fur returns of the Hudson's Bay Co. These years agree exactly with the Snowy Owl and shrike invasions.

A change in the length of the period is indicated. Since 1893, the period of maximum abundance of foxes has been, except for one five-year period, four years. But before 1893 the period was usually three years and the average was 3.3 years. Since the years of the invasions of the Snowy Owl and shrikes are the same as the years of maximum abundance of the Arctic Fox, it follows that the period of emigration of these birds has also changed.

A cause for the correlation between these three species is at once apparent. Mice form the principal food of these three predatory species and any fluctuations in the abundance of mice would be reflected in the numbers of shrikes, owls and foxes. Cabot (1921) records a peak in the abundance of *Microtus pennsylvanicus enixus* in Labrador, in 1905. Falcons, Snowy Owls and Ptarmigan increased. The Ptarmigan became abundant, of course, because the predators had plenty of mice to feed upon. In 1906, the mice had disappeared.

I am indebted to Mr. A. C. Weed of the Field Museum of Natural History for the following information. At Nain, Labrador, in the summer of 1926,

the mice were everywhere. In order to collect them it was only necessary to dig a hole in the ground the size of a bucket. During the night from thirty to fifty mice would fall into the hole. It is significant that late in the season several mice were found dead in the nests. Food was abundant and hence starvation was not the cause of their death. In July 1927, there were no mice. None of the various baits or traps was able to catch more than a few and collecting was given up. In the summer of 1928, however, the mice were becoming common. The effect of the disappearance of mice on the other members of the fauna was marked. In 1926, there were twelve nests of the Rough-legged Hawk at Indian Harbor. In 1927 and 1928, there were no nests. There were almost no Ptarmigan in the winter of 1927-28 and the natives had a difficult time to find food. Only two or three Spruce Grouse, one of the Eskimo's sources of food, were caught during the entire winter. In the summer of 1928 only three hares and only one Snowy Owl were seen. The Arctic Foxes were forced to feed on fish. In the winter of 1927-28 about seventy-five furs were brought in. Almost all of these came from one place where the foxes had been able to find fish. The normal catch is about fifteen hundred. The Great Horned Owl and the Raven were not affected. Jays, Robins, Crossbills, and Chickadees were as common in 1927 as in any year.

It is quite obvious that the mice increase and periodically die out. During the increase of mice, the predators likewise increase. Since mice are so abundant, the Ptarmigan and Grouse are not preyed upon and also increase. When the mice disappear the predators first exhaust other prey and then either migrate or die. This periodic fluctuation in abundance is not due to the mere geometrical increase of each species, as is shown by the fact that the lemmings of Norway, whose cycle is the same as that of the North American species, have the same period on different mountain tops.

A change in ultra-violet radiation has been suggested as a cause. A decrease in ultra-violet would result in a deficiency in vitamins not only in the animals directly but also in the food plants. Abbot (1935) concludes from extensive studies on solar radiation that there are twelve or more periodicities, all of which are integral submultiples of twenty-three years. This period is reflected in the weather as indicated by lake levels, the flow of the river Nile, Eocene and Pleistocene varves, and tree rings.

As was shown above, there was a change of period from 3.3 years to 4.1 years. The former is an integral submultiple of twenty-three but the latter is not. It seems unlikely, then, that the cycle of mice as reflected in the abundance of predators, is the result of a cycle of solar radiation.

Severtzoff (1934) has pointed out that the length of time between decreases due to disease is dependent upon the fertility of the species, since an epizootic disease requires a certain threshold number of animals before

it becomes a plague. It is thus unnecessary to postulate a periodic climatic cycle as the fundamental and complete cause. The epizootic disease is present at all times but only reaches plague proportions after the host has passed a certain threshold of numbers. Those species whose coefficient of fertility and threshold of numbers are the same would have the same period but the periods would not necessarily be synchronous. When several predators are dependent upon one animal, their cycles will obviously be synchronous.

Elton (1935) has described the periodic epidemic among *Microtus agrestis* in England. A protozoan infection of the brain due to *Toxoplasma* has been shown to be the cause. It seems certain that a similar cause will be discovered for the epidemics in the mice of the Labrador peninsula. Weather fluctuations, variation in solar radiation, lack of food due to overpopulation, may modify the cycle more or less in certain years, perhaps even hasten or retard it for one year. The fundamental periodicity, however, is probably determined by the epizootic disease.

A cycle of ten years is also known. The Snowshoe Rabbit is apparently responsible for the increase in coyotes, Red Fox, and lynx. A cycle in grouse which may depend upon grasshoppers (Criddle, 1930) coincides. No correlation between the shrike invasions and the ten-year cycle is apparent. It is possible that the ten-year cycle would become apparent in data over a longer period of years. This ten-year cycle is not correlated with the sunspot cycle (11.2 years) nor with the cycle of the revolution of the moon's orbit (8.85 years). There is also a cycle of 18.6 years in the relative shift of the planes of the orbit of the moon and of the earth. It has been suggested that the ten-year cycle may be a combination of these but it seems unnecessary to seek such a remote cause.

Wing (1935) has correlated migration dates with solar activity. As indicated by the "Wolf numbers," there are four cycles: 5.65 years (half cycle); 11.2 years; 23 years; and 73 years. Sandhill Cranes and Kingbirds arrive late in the season when the "Wolf numbers" are low. Grebes, loons and Chimney Swifts arrive early at both the lows and the highs of the "Wolf numbers." Brant arrive early when the "Wolf numbers" are high. Wing further states that the Ruffed Grouse, Sharp-tailed Grouse and Prairie Chicken have a cycle of abundance of 5.7 years. The Scottish Grouse (*Lagopus scoticus*) has a cycle of 5.8 years. These agree with the half cycle. He finds that the Snowshoe Rabbit and the English Rabbit (*Oryctolagus cuniculus*) synchronize with the eleven-year cycle. His conclusion is that "the sun is a dominating factor in wild life." From the data presented, his conclusions are not convincing. He makes no mention of the four-year cycle dependent upon mice.

In evolution by natural selection periodic fluctuations in numbers are of

great significance, as Elton (1924-25) has pointed out. When the population is at a maximum, selection takes place according to the ability to resist disease and to obtain mates and raise young successfully. At the minimum the animals are selected for their ability to avoid enemies, find mates, and resist unfavorable environmental conditions. Thus selection affects different attributes alternately. It must be remembered that only a change in the severity of selection can affect the genotypical constitution of a population.

During the increase in numbers a mutation, which has little or no adaptive significance, has an opportunity to become established. Since there is relatively little struggle for existence at the time when a species is recolonizing an area, any indifferent mutation would have a chance to become firmly established.

In the frequent cases where natural selection does not seem to be a factor in evolution, the fluctuations of numbers permit the automatic reduction of potential polymorphy. According to this principle (Du Reitz, 1931) the genotypical constitution of a population tends to become uniform. Heterozygotes can produce homozygotes, but the reverse is not possible. Hence the number of heterozygotes tends to be reduced. Whenever the population is continued from a fraction of the number of individuals, or where a colony is started by a few individuals, the chance of heterozygotes being included is proportional to their number. Thus it is possible for the less common genes to become extinct. In this manner, emigration may affect the genotypical constitution of a species.

SUMMARY

The Northern Shrike emigrates periodically. The Christmas censuses of 'Bird-Lore' provide a reliable source of data and show that the period is 4.2 years.

Snowy Owl invasions and the maximum abundance of Arctic Foxes coincide with the shrike invasions. These three predators are dependent upon a periodic abundance of mice. This period has changed from 3.3 years to 4.2 years.

A periodic fluctuation is not due to mere geometrical increase.

It is unnecessary to assume that solar variation must be a fundamental cause. It is suggested that the periodicity may be determined in the following manner. An epizootic disease, which requires a certain threshold to become a plague, would break out only after the threshold had been reached. The length of the period would, therefore, depend upon the coefficient of fertility and the threshold of abundance of the host.

Emigration may affect the genotypical constitution. Natural selection operates on different attributes at different times and may not operate

during increase. A decrease in population tends to produce a uniform genotypical constitution.

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Cambridge, Mass.

PARASITES OF THE EUROPEAN STARLING IN ILLINOIS

BY JOSEPH B. SOMMER

SINCE the European Starling (*Sturnus vulgaris*) has established itself on the North American continent it has, as a result of several investigations concerning its economic status, aroused much interest because of its yearly increase in numbers. The Starling's habits in most cases seem to be "beneficial to man or of an economically neutral character" (Kalmbach, 1931, p. 26). Tendencies for harm are "intensified by the birds' flocking habits, as well as by a general increase in abundance in recent years, and have led to insistent demands for curtailment in numbers."

The gregarious habit of the Starling is without question the greatest tendency for harm, and is responsible for damage done to tree foliage and agricultural crops. Since they have established themselves permanently in many parts of the United States, the food problem has become acute for them during the winter months. Interesting observations have been made by M. S. Ferguson (1932), concerning the feeding habits of the Starling in Canada during the winter months. Ferguson's report indicates that Starlings will feed on almost any food scraps and when practically no food is to be had, they will pick up non-food particles as may be found on or around farm premises.

The habit of frequenting various poultry yards in search for food raises a point of interest concerning the possibility of the Starling becoming a carrier of avian parasites from one domestic flock to another. In an attempt to investigate such a possibility, this study was made to determine the parasites in the intestinal tract of the Starlings in several areas of Illinois. The investigation covered the period from September, 1935, to January, 1936, and the intestines and tracheae of one hundred thirty-two Starlings were examined. Of this number, fifty-one birds were hosts to one or more parasites, all of which were found in the intestinal tract. Forty-five were hosts to *Hymenolepis farciminosa*; three to *Rhabdometra nullicollis* (?) and three to Acanthocephala: *Mediorhynchus grandis* (Van Cleave).

No evidence of the presence of the gapeworm (*Syngamus tracheae*) so common in poultry, was forthcoming. This is especially interesting when compared with similar investigations carried on by E. A. Lewis (1926) in Europe. Dr. Lewis found a thirty-five per cent infestation in the Starlings which he examined. In discussing the possibility of spreading the gapeworm from one locality to another, Dr. Lewis says that "Starlings are known to migrate over wide areas, and data collected regarding infestation of Starlings with the gapeworm, show a high percentage; it is therefore

claimed that Starlings, in particular, are more important than the turkey as a means of spreading the gapeworm." In a "Survey of Welch Helminthology," Dr. Lewis (1927) reports that intestinal nematodes present in Starlings were not very numerous, for he found only two species (*Porrocaecum ensicaudatum* and *Capillaria ovopunctata*). Since none of the nematodes as reported in the Starlings of Europe was found in the birds examined in this study, it may be that the avian nematodes have not found a host in the Starling of this immediate area. It is quite probable, however, that a more thorough investigation might reveal evidence of nematode infestation in this same area at some future date.

Birds from six different Counties of the State were examined, with the largest number coming from De Witt County, as shown in the first table. Because of the larger number coming from De Witt County, a comparative table will appear later using De Witt as a basis for comparison.

Counties	Number parasitized	Number non-parasitized	Per cent parasitized]
Alexander.....	1	1	
Champaign.....	0	1	
De Witt.....	43	64	40.18
La Salle.....	3	5	
Marshall.....	0	1	
Woodford.....	4	9	
Total.....	51	81	38.6

Had the investigation been carried on for an entire calendar year and over a more extensive area of the State, interesting observations would, no doubt, have been made concerning the season of the year when parasite infestation would increase. Because of limiting this study to a period of five months, and to a small section only of the State, it is obvious that no definite conclusions can be drawn from this survey.

The following table shows the infestation as arranged by months:

Month	Number parasitized	Number non-parasitized	Per cent parasitized
September (1935).....	10	11	47.6
October.....	11	25	30.8
November.....	16	23	41.02
December.....	13	14	48.1
January (1936).....	2	8	20.0

For comparison with the above table, the following for De Witt County only is of especial interest:

Month	Number parasitized	Number non-parasitized	Per cent parasitized
September (1935).....	7	4	63.63
October.....	8	19	29.6
November.....	15	23	39.47
December.....	12	14	46.15
January (1936).....	1	7	12.5

Using De Witt County as the most representative county, it can be said (advisedly) that September was the month of greatest infestation. From the table which summarizes the total birds examined by months, it seems that the percentage was a trifle higher in December than in September, but as stated before, no definite conclusion can be drawn from this table.

The number of parasites per bird varied to the point that the host which was most heavily parasitized had fifteen cestodes, while the ones with the fewest number gave evidence of only fragments of cestode. The average number of parasites per bird for the entire number examined was 1.14, while the average number for the total of the parasitized birds only, was 2.96. A total of one hundred and fifty-one parasites was examined.

The following table gives a summary of the number of parasites per bird:

Number of parasites	Number of birds
fragments	3
1	19
2	10
3	7
4	4
5	2
6	0
7	1
8	2
9	0
10	0
11	1
12	0
13	1
14	0
15	1

In an investigation carried on in 1909 by B. H. Ransom (1909, p. 114), five species of cestodes common to North American birds were found in the Starling. One of the five (*Hymenolepis farciminosa*), was found to be most common to the birds examined in this survey by Dr. Ransom.

It is also of interest to note that D. E. Salmon (1896, p. 32) reported the presence of *Hymenolepis farciminalis* in the Starling as early as 1896.

Considering the fact that the Starling was first introduced into the

United States in 1890 (Chapman, 1932, p. 429) and the fact that it so rapidly adapted itself to its new environment, one is lead to believe from this investigation that the rate of increase of parasite infestation in the Starlings of Illinois is not dangerously great.

SUMMARY

1. Because of the superficial number of birds examined, no definite conclusions concerning cestode and nematode infestation can be forthcoming, but evidence at hand is a good indication of what might be expected in the Starling.

2. The yearly increase in numbers of the Starling in Illinois will unquestionably cause future surveys to show variation from the data collected in this investigation.

3. A more extensive survey which would be more representative of single flocks, and more representative of the various regions of the State, would, without doubt, reveal greater variety and numbers of parasites than found in this survey.

4. The possibility of the Starling becoming a menace in carrying cestodes and nematodes to poultry flocks in Illinois is at present not very great.

ACKNOWLEDGMENTS

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AVIAN HABITATS IN THE THORN-BUSH AREAS OF NATAL

BY RAYMOND B. COWLES

THE following observations were made by the writer while engaged in collecting and research in the thorn-bush area of the Umzumbi valley about sixteen miles northeast of Port Shepstone, Natal, South Africa. Most of the records were obtained during a period of eighteen months spent in this territory in 1925 and 1926. At that time no organization of the data dealing with this particular topic was attempted and it was not until several years later, when the notes were being coördinated for other purposes, that the ideas expressed here began to appear.

As a result of these studies, it appears probable that nearly identical habitats require entirely different degrees of specialization. At one extreme there are those habitats requiring little adaptation and at the other, those which impose unexpectedly rigorous demands upon their avian inhabitants despite the fact that birds are ordinarily very mobile forms and therefore might be expected to show sufficient versatility to enable them to meet conditions in what appear to be similar habitats. In the habitats that seemingly require less rigid conformity there is no doubt the factor of greater adaptability of many species of birds and their consequent penetration into floristic areas other than those which are particularly favorable to them. This behavior is also facilitated by the fact that the differences between the zones are not as great as in some places where the bird fauna is sharply confined to restricted areas.

In discussing the local distribution of the fauna the following general types of vegetation seem of greatest importance:¹ the *coastal mesophytic bush*; *thorn bush*; and *scattered bush* which may be of two types, that is, allied to either the coastal bush or the thorn bush, and characterized by the plants of either area forming clumps of from ten or fifteen feet to twenty or thirty yards in diameter. These scattered clumps of trees and shrubs may be subdivided, from a botanical point of view, into three kinds: (a) a vestigial bush, that is the remnants of the larger bush; (b) nuclear clumps, progressing from a single tree to an aggregation of other plants; and (c) areas that appear to be clumps in a static condition, existing because of some small, clearly delimited aggregation of factors necessary for their existence, but which will neither spread nor contract under normal conditions. From the zoological point of view, scattered bush, irrespective of its type other than the major divisions of coastal or thorn-bush nature, can be considered as of one kind only. This, however, probably holds true only

¹ For detailed study see Bews, J. W., The plant ecology of the coast belt of Natal. Ann. Natal Mus., vol. 4, pp. 367-470, 1919.

when considering the larger forms of life with greater powers of locomotion. A study of the invertebrate life in these isolated clumps of bush might reveal interesting cases of origin and distribution, that would prove excellent subjects for ecological research.

In addition to the bush and scattered bush, there is the tree association. This may again show affiliations with either the coastal bush or the thorn bush. Between scattered bush and scattered trees are clumps or patches of shrubby growth, limited in extent and with only a few obvious faunal differences. However, there may exist a greater difference than was observed by the writer. The scrubby growths are intermediate in character, and fill the gap between the bush on the one hand and the grassy areas on the other. The grass areas fall into two categories as seen from the zoological standpoint. These are composed of the areas lying between bush, scattered bush, and scattered tree, never large in extent and frequently interspersed with clumps of shrubs. The other type is found on the ridges and hills and is much more extensive, contains fewer trees and scattered bush, and these are therefore much farther apart, so that such country is composed largely of wide, open fields.

Along the rivers and streams are swampy areas. These are again divisible, but the differences are not well defined, although it is obvious that the reed beds and smaller marshy areas at the edge of a pool are different in nature from the more extensive and almost entirely marshy areas in some of the valley bottoms. Birds, and apparently mammals, may be found in one type, while absent in the other, but there is some penetration from one to the other in both cases.

In noting the local distribution of the various species of animals, these habitats will be used, and yet it is obvious that many species are not strictly confined to any one of the smaller divisions that have been listed, and the following note from the writer's field journal relating to the distribution of the Black Cuckoo-shrike, *Campephaga flava*, illustrates fairly well how a comparatively small difference in habits may affect distribution in these areas. "Like many other birds found to occur in similar situations it (*Campephaga flava*) doubtless wanders freely through the treetops of the larger bush areas, keeping in the sunshine and living under conditions which are essentially the same whether occurring in large bush or a smaller one growing in the open by itself. It is probably due to this habit that it and many other species are not confined to either type of bush, or for that matter to bush at all, as several species range about among the scattered trees as well." The species which appear to be most closely confined in their distribution within the types of bush are those living lower down in the thickets of undergrowth or in the ground cover or on the ground. Birds from the scattered bush are usually present along the edges of the

large bush but not inside it. Birds that seem to be more typically scattered-bush forms, but which live at the higher levels, seem to penetrate widely into the large bush, but the reverse is not true. Birds which live in the thickets of the large areas of bush are almost entirely confined to the large bush, and are only occasionally found in a few particularly favorable localities in the smaller scattered bush. Tree-top birds, found mainly in the larger bush, are seldom found in smaller areas; in other words, the dwellers of the scattered bush are not as specialized in habits as are the others. All of these facts apply with even greater force to the larger species of birds.

It is regrettable that more opportunity for collecting mammals, amphibians and reptiles was not available, as in these forms one might expect to find greater specialization in response to minute differences in environment. The mammals, especially the smaller members of the groups, are able to fit into more minute niches and since they are for the most part more directly dependent on plants for food, as well as shelter, they might be expected to furnish good corroboration of facts discovered in botanical ecology. The amphibians are ordinarily strictly confined to definite types of environment and many reptiles are dependent on both the mammals and amphibians for their existence.

It will be noted that the main vegetational areas are bush; scattered bush; edge of the bush, including marginal areas of both types; shrubby areas; grass; and marsh. These areas are again subdivided, the bush habitats into three zones, grass into two, and marshes into two scarcely distinguishable types so that here they will be included as one.

The bush and scattered bush are subdivided on the basis of layers. The uppermost, or tree tops, includes only the greater amount of foliage, the free, projecting portions and the liana-free limbs. Below this zone is the intermediate layer, composed for the most part of liana-draped limbs of the larger trees, a mixture of lianas, and tree foliage of the smaller trees including the tops of those of intermediate height, shade-loving, smaller trees and bushes. The lowest layer contains the ground-cover plants, including the predominant herbaceous *Isoglossa woodii* of from ten to twenty inches and other fairly tall annuals and low perennials, and the ground-surface itself. These three divisions are most conspicuous in the bush, but occur also in the patches of scattered bush, especially the larger ones, where they are necessarily less sharply defined since there is some lateral penetration of light. There would be even less differentiation between the layers were it not for the character of bush in these inland valleys, that is, low growing, and invariably having thickets along the margins reaching high enough to approach the roof-like upper strata.

The grassy fields as before noted, fall into two main types, although a third feebly characterized area is present. This third area has been in-

cluded with the lowland grass association, with which it has such close affinities from an ornithological standpoint as scarcely to justify separation. It is the tall, clumpy grass zone usually found in proximity to trees and scattered bush, and separated from these sections by the shrubby area into which it merges.

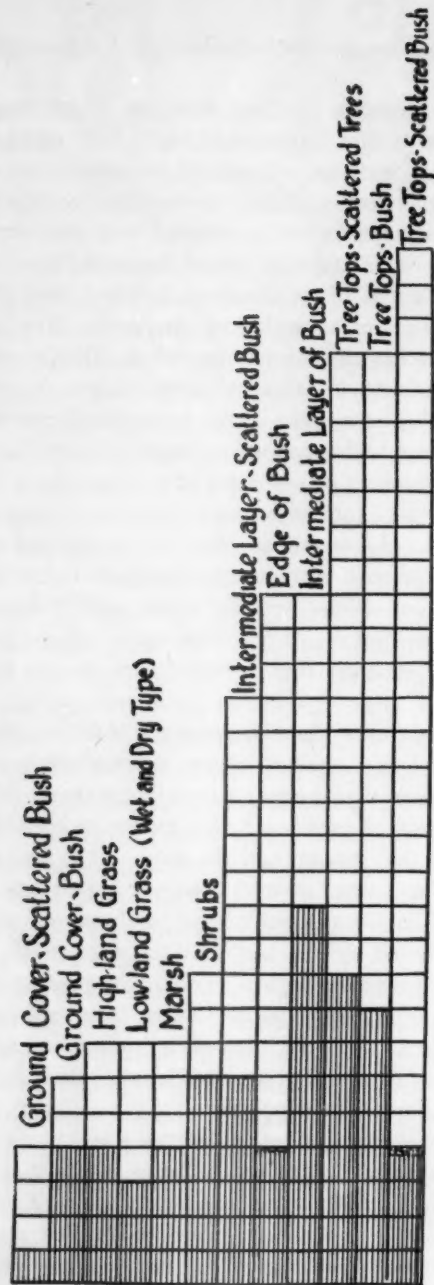
When an attempt is made to assign the birds to these various habitats, some interesting facts appear. Certain species are easily and clearly placed without confusion; these species are sedentary or at any rate never wander from the specific zone to which they are particularly adapted. Others cannot be so easily placed and are found to pass readily from one of the habitats to another. These habitats obviously are either less differentiated or the birds inhabiting them are not restricted to them by specialization. It is noticeable that it is easier to place bush birds in their respective layer than it is to assign them to their place in the horizontal distribution. There is considerable vertical movement but the birds in the lower areas are seemingly more closely restricted to their habitat than are those of the tree tops, and the ground-cover forms are the most restricted of all. This may indicate that there are great differences between tree-top zones and the tree tops of the bush and scattered bush. This is also indicative of the apparently greater adaptation to a specific habitat in the lower layers of the bush, a theory that is well illustrated by listing the birds remaining in any given location following deforestation and the planting of fruit trees, or non-native trees such as *Eucalyptus*, *Grevillea*, *Acacia* of the tanbark-wattle type (*Acacia nigra*), umbrella or China-berry tree, etc. A rather satisfactory list of tree-top birds can be obtained under such conditions, but the garden thickets composed of roses, weeds, berry vines, etc., scarcely ever harbor species found habitually in the lower layers of the bush. They are unable to survive the drastic change.

When the facts are considered with a view to determining which habitats require the greatest degree of specialization, it seems probable that those having the greatest proportion of fixed-habitat species are also those requiring the greatest degree of specialization. It is exceedingly difficult to determine which species should be considered fixed in habitat since the criteria applied may be varied according to the point of view as to which are of greatest importance. The nesting place might be considered as a basis for placement of a species but here one encounters those birds having a fixed type of nesting place in which they may spend sixty or seventy per cent of the time but only during a comparatively brief period of the year, while the rest of their existence is passed in their feeding and resting territory, often very different from the nesting area. If classified solely on the basis of feeding grounds which they inhabit, the species are not accurately placed since this also represents only a small portion of their existence, the

daytime habitat. Probably the best basis on which to judge the true habitat is a consideration of the areas to which they retire in the presence of danger. When the collector appears on the scene most species of birds tend to select a certain section of their general habitat into which to retire. Judged on this basis the birds can be assigned with some degree of accuracy to habitats, using what is probably one of the most important elements in their existence as a guide. It is admitted, however, that when confronted by danger in the form of a hawk, certain species dive into the nearest available cover while the same species upon being frightened by man, seeks safety in the higher trees or takes refuge in flight. Another difficulty is encountered in placing even some of the most closely restricted species, as for instance *Camaroptera brachyura brachyura*. A condition is sometimes reached in the development or reduction of an area that is in transition, so that it may provide, to a limited extent at least, conditions similar to those typical of the habitat of a certain species. The occurrence of individuals of the species adapted to such a habitat can easily be included as an example of overlapping and so species actually quite restricted may be classified incorrectly, as less restricted. If the situation involves a species of bird in a very small group of types such an error may change appearances considerably.

In compiling the data for the accompanying chart an attempt was made to balance certain habits against others of seemingly equal importance. Also it should be noted that the data suggesting these results were compiled without any intention of explaining distribution or conditions in habitats. The ideas followed the arranging of the data. It is well understood that the attempt to balance one factor of apparent importance against another of seemingly equal importance is likely to result in errors, but such a procedure was necessitated by the fact that the data, while being collected, were not critically examined with a view to the present use. The chart, which has resulted from a study of field notes, is in its present form merely an attempt to attain a happy medium with a minimum of misinterpretation. It presents a phase of distribution that seems rather interesting, but it should not be considered as complete.

Certain interesting speculations arise from a consideration of the chart. Birds fall into two classes for which the terms itinerant and sedentary are used. Those species inhabiting the tree tops of scattered bush are the least specialized in habits, suggesting that this is the most generalized type of habitat. The greatest discrepancy between number of itinerant and sedentary forms exists here. Birds of tree tops of the larger areas of the bush and birds of the tops of trees in the open show somewhat less generalization, there being fewer itinerants in proportion to sedentary forms in these habitats. The reason for this is somewhat obscure. The natural



HABITAT DISTRIBUTION OF
BIRDS (114 SPECIES)
NATAL, SOUTH AFRICA

□ ITINERANT SPECIES
▨ SEDENTARY SPECIES

supposition is that trees in the open would present fewer demands in the way of specialization than those in the bush, or scattered bush, and would therefore stand in the first place as regards simplicity. It is probable, however, that these two areas are more specialized. Tree-dwelling birds of the bush apparently require a wide expanse of leafy foliage below them for shelter and for roosting places at night when they must depend on secretiveness for escaping their enemies. In the daytime they depend on their own alertness and activity to escape danger. On the other hand, birds of the open living in the trees depend upon the fields of grass as a source of food, and would be unable to obtain food from the customary place, lower levels, in the bush. A hawk dependent on field mice would obviously be unable to subsist in a forest without drastic changes in habit, and on the other hand, a Purple-crested Lourie dependent for protection at night on the thick vegetation below it, would be unable to find much satisfaction in a night spent in a tree top out in the open. Birds living in the scattered bush, however, find no such extremes in their environment and roam to trees in the open and trees in the bush with almost equal satisfaction.

The ratio between sedentary birds and vagrants in the intermediate layer of the bush indicates that these species are even more confined to, and dependent on a special habitat than those of the preceding areas, and it is obvious that there is little similarity between an intermediate layer of the bush and any of the other areas with the single exception of intermediate layers in scattered bush. Therefore, while tree-top birds find three somewhat similar areas in which to move about, the intermediate-zone birds find only two, and the figures suggest that this area of the scattered bush is less specialized than the same layer in the bush. The intermediate layer of the bush contains eleven sedentary and nine itinerants; the intermediate layer of the scattered bush only six sedentary to eleven itinerants.

As might be expected the next habitat, edge of the bush, an area having close affinities with shrubby areas and in places overlapping, indicates that it requires little adaptation on the part of its inhabitants,

Shrubby growths, since so similar to edge of the bush might be expected to resemble it in most respects but when examined as it stands in the open, not connected with the bush, it seems to have requirement affinities almost as dictatorial as the next three areas; *i. e.* marsh, grass of two types, and ground cover in the bush, all of them apparently imposing sharply defined requirements on resident forms, therefore containing only species definitely fitted to cope with special conditions existing within their confines.

The last habitat, ground cover in scattered bush, suggests that little specialization is required in order to exist within its rather unspecialized territory.

SOME ARIZONA BIRD STUDIES

BY HERBERT BRANDT

It was the writer's privilege to spend two weeks during mid-May, 1936, observing the bird life in the Upper Austral Zone on the western slopes of the Huachuca Mountains of Arizona, in the vicinity of the Sunnyside Ranch. A considerable amount of ornithological work has been done on the eastern slopes but there has been little reported from the steeper, more rugged western side of this magnificent mountain range. I was accompanied by Mr. Edouard C. Jacot, the noted Arizona collector, who is very familiar with the birds and the country on the western side of the mountain. Following are a few of our observations which it may be well to record.

BAND-TAILED PIGEON, *Columba fasciata fasciata*.—We found this large pigeon common in the live-oak groves that clothe the western foothills of the mountains up to an altitude of about 6500 feet. It was just starting to nest when I left on May 18. Three nests were observed, each containing a single egg which seemed to constitute the full complement. Dozens of birds were often seen in a day's tramp over the stony, wooded hills and they were conspicuous in their bounding flight.

Jacot states that fifteen years ago the Band-tailed Pigeon was nearly shot out in the Huachuca but, probably due to continuous federal protection, they have been increasing each year until now they have become common in the oak belt on the western side of the range.

SPOTTED SCREECH OWL, *Otus trichopsis*.—This rare little owl appears to be found within our borders chiefly in the Huachuca and Catalina Mountains of southern Arizona, but little or nothing seems to have been written concerning its life history. Bendire, in his 'Life Histories of North American Birds,' describes the nidification of what he thought to be the Spotted Screech Owl, and likewise Gilman, in 'The Condor' for 1909 (vol. 11, p. 147) speaks of collecting its eggs. On investigation, however, I have concluded that both descriptions should refer to *Otus asio gilmani*, because the Spotted Screech Owl has never been known to occur in the Lower Austral Zone among the giant cactus. The reason that these records are incorrect is presumably because the early name for the common Screech Owl of Arizona, as applied by the first A. O. U. Check-list, published in 1886, was *Megascops asio trichopsis*. This error was discovered by Ridgway, who in 'The Auk' (vol. 12, p. 389, 1895) corrected the name of the common Desert Screech Owl, which he showed was not *Megascops (Otus) trichopsis*, and named it *Megascops asio cineraceus*, assigning the name *Megascops trichopsis* to the Spotted Screech Owl, to which it belongs. With this in view, it appears that the eggs and nest of the latter have not been described, although Swarth, in his 'Distributional List of the Birds of Arizona' (page 30), mentions that G. F. Boeninger took a set of three eggs in the Huachuca Mountains, on June 19, 1901.

We were fortunate in finding two nests of this very rare bird: one on May 8, with three highly incubated eggs, and on the following day, a second set of the same number in which incubation had just begun. The first nest was situated 22 feet from the ground, in what was apparently a Flicker's hole in a dead juniper stub growing at an elevation of about 5900 feet, in the bottom of Sunnyside Canyon. The incubating bird left its retreat when Jacot struck the tree sharply, but returned almost

at once and was captured on the nest. The three globular white eggs were found, partly buried, at the bottom of the cavity, which was 16 inches deep.

The second nest was detected by the same method as the first. In this case the bird had selected a large sycamore tree growing at an altitude of about 6300 feet, which is here the upper limit of the Upper Austral Zone in Bear Canyon. The bird chose an open cavity, formed by the breaking out of a main limb, in which to lay its three white eggs. No lining for the nest was employed, but the eggs were deposited simply on the accumulated débris. The site was open above, and so formed that the sitting bird could look out without effort and observe whatever occurred at a large spring below. This owl was collected also, and at each nest the incubating bird proved to be a female.

The measurements of these two sets of eggs of the Spotted Screech Owl are as follows:

Set 1	Set 2
32.8 x 28.6 mm.	32.3 x 29.0 mm.
33.7 x 28.0	31.9 x 28.7
33.5 x 27.8	32.3 x 28.7

These furnish an average of 32.75 x 28.47 mm., dimensions which are considerably smaller than those of the eggs of the *Otus asio* group found in southern Arizona. In color, the egg of the Spotted Screech Owl is uniformly flat white; the shell is strong though not very thick; and the surface has a slight luster. In contour the egg is usually oval although one set inclines toward the spherical. Three eggs seem to constitute a full complement.

We found the Spotted Screech Owl not uncommon in Sunnyside Canyon, where a pair dwelt about every mile or so. As soon as it becomes dark this little bird begins to bark its four, evenly pitched notes, which are more dog-like than those of the Screech Owl. It is tireless in its refrain, which may continue uninterrupted for an hour or more, usually coming down from well up on the canyon-side. The voice is gentle yet has far-reaching power and somewhat resembles the sound produced by blowing across the opening of a bottle. This bird is not a migrant, according to Jacot, but spends all its time in the canyons and may be heard at almost any time of the year, especially on those nights of the perfect moon.

Jacot had devised a method of observing these nocturnal birds that is both ingenious and instructive. Equipping ourselves with a strong electric headlight apiece, we went forth into the darkness of the canyons and worked our way toward the calling bird, until oftentimes we had the pleasure of turning our lightbeam on the curious little ball of gray feathers as it sat in the darkness of its deep bower. Then it ruffled its feathers wide and its curious yellow eyes reflected back to us a sparkling eyeshine of gold.

On one occasion a Spotted Screech Owl, from high up on the mountain side, was giving incessantly its nocturnal calls. As it was a long climb up to meet the bird we tried to lure it down to us by "squeeching." Very promptly, after the first few "squeeches," its answering voice was notably louder, hence we surmised closer, and before long, like a shadowy bat in the darkness, the bird alighted in a tree only five feet over our heads. In inquisitive composure it permitted us to shine it to our hearts' content, to study it with our glasses, and to enjoy the rare privilege of intimacy with this rarest of North American owls.

ELF OWL, *Micropallas whitneyi whitneyi*.—There are three other quaint little nocturnal owls that dwell in Sunnyside Canyon: the Mexican Screech Owl, the

Flammulated Screech Owl, and the Elf Owl. Each has distinctive calls and is met with at not infrequent intervals. I was surprised to find the Elf Owl not uncommon here, whereas this strange little creature is supposed to stray but seldom from the arms of the giant cactus on the lower desert. A pair of these little birds occupied a Flicker's hole in a large tree near the edge of the corral at Sunnyside Ranch and each evening after the blanket of night was spread, the little male perched near the top of a medium-sized tree, where he whimpered and whistled continuously for some time. The usual call is a rather high-pitched, squeaky, tremulous whistle numbering four or five notes without change, but at intervals he modified the monotony by warbling and lisping his strange owl words that none but the elect may understand. The eyeshine of this little bird, like that of the other owlets, is yellow to gold, and often not very distinct.

COPPERY-TAILED TROGON, *Trogon ambiguus ambiguus*.—The turkey-like call of this rare, semi-tropical visitor is a common bird note in Sunnyside Canyon and in the lower reaches of Bear Canyon. There were at least three pairs of birds in each of these valleys and in the morning they noisily called back and forth to one another. These valley floors are usually densely wooded and would make this bird difficult to study were it not for its inquisitive nature, for usually it is easily lured by the "squeech." One lavishly garbed male and his more modest mate repeatedly allowed me to walk up to within some twenty feet of them before they would fly a short distance, then allow me to approach them again. Each time they both called their hen-turkey-like notes: *kum-kum-kum*, ever answering my "squeeches" of a like count and inflection. That this bird breeds in the vicinity there is little doubt, but we did not spend time seeking its home as Arizona has wisely put it on the permanently protected list, and in consequence this mountain-loving species is again becoming common in its densely tangled retreats.

SOUTHERN RED-BREASTED SAPSUCKER, *Sphyrapicus varius daggetti*.—On May 7, 1936, we collected an adult female of this species at an elevation of 6000 feet, in Scotia Canyon of the Huachuca Mountains, which is about three miles from Sunnyside Ranch. This specimen has the head, throat, and breast bright red, without any black on the breast, and is a typical example of this well-marked subspecies. So far as I can discover, there is no published record of its occurrence in Arizona, hence our record furnishes a new bird for that State.

CLARKE'S NUTCRACKER, *Nucifraga columbiana*.—This roving species evidently found the year 1936 to its liking on the lower western slopes of the Huachuca Mountains, for it was often seen there flying about in small numbers. Three males were collected, one below 6000 feet elevation.

Cleveland, Ohio

FURTHER NOTES ON THE NESTING OF THE BARN SWALLOW

BY WENDELL P. SMITH

In a former article in 'The Auk' (vol. 50, October 1933), we gave a record of intermittent observations on a nesting pair of Barn Swallows (*Hirundo erythrogaster*). So interested did we become in the many unsolved problems suggested, that we have continued the study as time and opportunity offered.

In 1933, fire destroyed the building used for years as a nesting site by this species. But later in the season, a new building replaced it, too late, however, for nesting although many a fall migrant swallow found its metal roof a convenient place for resting. The barn itself was not open to birds but a shed, open on three sides, adjoined the larger structure. This was fifty feet long by ten feet wide with a height of twelve feet. In addition to being more accessible, it afforded a better opportunity for observation.

On May 22, 1934, a pair of Barn Swallows was seen flying about the structure, the male in pursuit of the female. This was the first indication of interest on the part of any individuals of the species in the building as a nesting site. Two days later, on the 24th, work on a nest began. The site selected was the top of a large beam under the roof, close to the wall of the barn and about fifteen feet from the end of the shed. By nightfall of the 24th, a shell of mud, one inch in height, had been constructed, forming three-quarters of a circle, while the fourth quarter was formed by the barn wall. During the morning of May 25, the pair was seen inspecting another part of the beam but the birds soon returned to carrying material to the location first selected. During the 25th and 26th, another half-inch was added to the mud wall, the work being carried on at intervals with frequent intermissions. May 27 saw the structure increase approximately one-half inch in height although more material was added to the center of the mud shell and progress was by no means uniform. The 28th of May witnessed an acceleration of activity, with work moving rapidly and much more regularly. The resting and feeding intervals, however, were longer and more numerous during the afternoon. Bits of straw were first used as material on the 28th. May 29 saw a continuance of activity with the structure apparently completed by nightfall. But this was not the case from the birds' standpoint as work was carried on during the four following days. On May 31, the female was seen shaping the interior by movements of the body, pressing her breast against the sides, moving about from side to side. Some work, both in bringing new material and in moulding into shape, was continued until June 2, when the structure was completed in the morning of that day. Both sexes took part in procuring material, but

the female only was observed shaping the nest and she alone seemed active in securing material as the structure neared completion. In the earlier stages the male carried less material but was more active than the male described in the previous article.

The spring, which served the pair of the preceding article, also afforded this pair a source of mud in part, although a nearby drainway was also visited. Straw was secured within thirty feet. The female was seen flying to the nest with a piece of straw ten inches long, rather too heavy a load as it impeded her flight. Frequently the bird would take bits of straw and mud at the same time, picking up the former and then flying to the source of the mud supply before returning to the nest. Considerable picking was required to complete a load and often a bird would leave for the nest apparently dissatisfied with the amount of material secured.

On June 3, the day following the completion of the nest, the first egg was laid and one was added each day until the completion of the clutch of five on June 7. Incubation began in part at least with the laying of the second egg on June 4, as the female was seen sitting a number of times throughout the day. At daylight on this date and subsequently at nightfall, the male was perching on the beam within two feet of the nest.

Evidently the shed was held as territory, for on June 6, when a Phoebe (*Sayornis phoebe*) attempted to investigate the beam at the opposite end of the structure, thirty-five feet distant, it was driven away by the male several times. This was repeated a number of times during the succeeding ten days, for the Phoebe seemed bent on finding the second nesting site in the shed. On May 29, another Barn Swallow (a female) was driven away by the male. Subsequently a female of this species was seen about at intervals and was usually driven away by the male of the nesting pair but not always. On the 17th of June a pair appeared and their coming brought forth both individuals of the nesting pair to do battle. The male in possession flew at the intruding male and, after a few feints and angry twitterings, the intruders departed.

Four eggs hatched on June 20, and the fifth on June 21. This would allow fourteen days for the incubation of the egg last laid. It is probable that despite the intervals of sitting on the 2d of June, incubation did not begin until after the laying of the fourth egg on June 6.

Perhaps typical of the incubation period is the following forty-five-minute schedule observed: June 17, 10.20 a. m., both male and female perching on wire, sixty-five feet from nest, the former taking flight at intervals to hover over the female while uttering soft, twittering notes. The female enters nest at 10.22 and remains until 10.45. Meanwhile the male also, leaving the wires at 10.22, flies over the fields until 10.28, when he returns to the same resting place where he utters those few feeble notes that pass for song

in this species. Off again at 10.30 for another flight afield, lasting four minutes, he is back again at 10.34, this time perching on the barn roof. At 10.36 he flies again and continues coming and going at intervals of a minute or less until 10.45, when he flies directly to the nest and the female leaves. She spends three minutes flying about adjoining field and returns for a two-minute rest on the barn roof. At 10.50 she leaves again but returns at 10.54 in company with another pair of Barn Swallows. The male left the nest at 10.55, driving away the intruders, and with his mate flew to the nest but we were unable to see what was done there. A three-minute period of rest on the roof followed and the nest was again visited by both individuals. Both left at 11.03 and the female returned alone at 11.05 to enter the nest.

Owing to nest location, we were able to observe in more detail than formerly the departure of the young and the events preceding. The evening of July 4 witnessed a break in the parents' habit of spending the night near the nest. They were last seen flying about at 8.00 p. m., and investigation with a flashlight at nine o'clock verified the absence of the female from the nest and the absence of both parents from the shed. The search was repeated just before dawn with similar results. Where they spent the hours of darkness on the night in question and on the following nights preceding the departure of the young, is a mystery, but that they had a definite roosting place is indicated by their disappearance at dusk and reappearance in the early morning from a particular direction at approximately the same distance. On the morning of July 6, the male appeared at 3.52:30" a. m. and the female at 3.58:30". On the 7th of July the parents were last seen in vicinity of the nest at 7.46 p. m.

On July 6 and 7, the heads of the young were protruding well above the rim of the nest and on the date first mentioned one of the brood ventured to perch on the nest's edge. On the following day three were seen in that position.

At 7.57 a. m., on July 8, both parents approached, and flew slowly on hovering wings back and forth through the shed, at times coming to rest in mid-air near the nest and throughout the performance uttering soft, coaxing notes, urgent in character despite their persuasiveness. After about four minutes of this activity one young bird suddenly sprang into the air from the nest. Instantly both parents followed it, flying in and out, above and below their offspring, the while encouraging it by voice and light contacts. A flight of one minute ended in rest upon the barn roof and another brief flight was followed by a similar period of rest. The young swallow flew well, but seemed somewhat unsteady while banking and turning against the wind. It rapidly gained confidence and appeared to enjoy the exercise while the parents clearly evinced satisfaction. After seventeen

minutes spent with this bird, the parents returned to the shed at 8.18 a. m., and began a repetition of their flight around the nest, but two minutes of this failing to arouse any response from the young they ceased temporarily. Intermittent attempts throughout the day ended in failure so that at night-fall the four occupants were still in the nest. The parents left them at 7.25 p. m. The second young swallow left on July 9 (the following day) between the hours of 6.00 and 8.00 a.m., and all five left before 12.30 p.m.

Prior to leaving, the young had been banded, numbers L33489-493 inclusive, and as this brood was the only one banded, the young could be recognized whenever a band could be seen. This made it possible to follow the family fortune in a measure. At 6. 40 p. m. on July 9 (date of departure for four of the brood), the whole family returned to the shed, flying around under it and about the barn. By 7. 15 p. m., three had settled in the nest. At 7.30, the two remaining young had perched just outside the structure but at 9.00 p. m. a flashlight revealed all five packed into the nest. On the 10th, they came at 6. 00 p. m. and again spent the night in the nest and on the 11th, they used the nest again as a roost for the last time. They came back to the shed at sunset on the 12th, but after flying about the shed for a time, they left to seek some other place for the night.

During the first few days subsequent to leaving the nest, the young swallows remained for the most part within view of the nesting site. When not flying they spent the time resting on wires, two perches being located respectively within thirty feet of the former nest and four hundred feet distant. On July 12, another family of Barn Swallows entered the area, resting on the wires near the nest in company with the family possessing the territory. No resentment was shown by the parents of the banded brood and, while apparently merged in one flock, each family group kept its identity, for when certain parents approached with food, the banded young remained quiet while those unbanded opened bills and fluttered wings and vice versa. On the 13th, the two families were still together with the relationship unchanged. The first evidence of the breaking up of the family was noted on July 15, when only two of the young were seen together. A decrease in feeding by the parents was also noticeable on this date. The family separation was only temporary, however, for the five were together daily until the 18th, and feeding by the parents was continued. The alien swallow family left on the 16th. Five young were observed together on July 20, and three of them were wearing bands. The parents accompanied them. Three banded young were seen in the same location on the 21st, in company with seven young of the same species, but their behavior did not indicate coherence. One banded individual was recognized in a flock of four young on July 25, and one, also marked, in a group of fifteen on August 6. Five young with two adults were flying around the old nest on July 26, but presence or absence of bands could not be determined.

These activities may be compared with the behavior of the species in general in this vicinity as follows. Flocking evidently began about July 15, as flocks larger than family units were first seen on that date. Migration seemed under way by August 2, and local breeding birds seemed largely gone by August 18.

There was no second nesting, although on July 14, the adults were seen flying about in the shed which supplied the former nesting site. On the 15th they were inspecting an old Phoebe's nest in another building 125 feet away. Investigation of one or both sites continued until the 18th, but after this date no interest was seen to be displayed until July 29, when the female sat for some time in the old Phoebe's nest. During the period of July 14-18, the male frequently displayed great interest in the search for a new nesting site, hovering over the female and twittering excitedly. After the 18th, interest on the part of both individuals rapidly waned.

A third individual, an adult female, seemed to take some part in rearing the young. We have already mentioned this bird briefly, as having been driven away a number of times. On July 6, the two females were seen sitting side by side within two feet of the nest and the male sat about fifteen feet away. Their relations were amicable despite the fact that two hours before, the male had driven away this superfluous female several times. On the 7th, this third individual was still about, but only once was the male seen to show any displeasure over her presence. The following day witnessed even more frequent visits but the male drove her away more often and she was not seen in the vicinity again. At no time was this female seen feeding the young or brooding. We wondered what her status could be but it remains one of the many mysteries which we hope further observation may solve.

Wells River, Vermont

EUROPEAN DUNLINS IN NORTH AMERICA

BY LUDLOW GRISCOM

UNTIL very recent years the Dunlin (*Erolia* or *Pelidna alpina*) or Red-backed Sandpiper has been uniformly treated in America as consisting of two subspecies: typical *alpina* of the Old World, the "European Dunlin"; and *sakhalina* of the New World and eastern Siberia, the Red-backed Sandpiper. Ridgway's diagnosis of these two races in the 'Birds of North and Middle America,' pt. 8, p. 257, 1919, unfortunately continued the emphasis on the smaller size of European Dunlins as compared with New World birds, but I do not know how this idea first got started among American ornithologists, while the excellent color characters were relegated to second place or overlooked. The current A.O.U. Check-list continues the concept of two races, but a footnote very properly points out that some of the stragglers to North America may prove referable to the subspecies *schinzii* Brehm or *arctica* Schiøler, rather than to typical *alpina*.

For the benefit of American field workers, it may not be out of place to submit a brief review of the Old World subspecies and their characters. Those interested in further details are referred to Hartert (Vög. Paläarkt. Fauna, Nachtrag 1, pp. 82-83, 1923) and Buturlin (*Alauda*, 1932, pp. 261-266).

1. *Sakhalina* (Vieillot).—Easily distinguishable from any Old World subspecies in that summer adults have dorsal region paler and brighter, bright cinnamon rufous variegated with black, the feathers blackish centrally, broadly margined with cinnamon rufous; chest and throat very finely streaked with grayish or dusky, appearing nearly immaculate, in sharp contrast to black abdominal patch. Not appreciably larger than

2. Typical *alpina* (Linnaeus).—Summer adult with feathers of dorsal region broadly blackish centrally, more narrowly margined with dull ochraceous or rusty, consequently appearing darker and duller above; throat and breast heavily streaked or spotted with dusky, passing without abrupt contrast into the black abdominal patch. Breeds in Iceland, Färoes, arctic Europe and western Siberia.

3. *Centralis* Buturlin.—Exactly resembles the last in color and size, but 24% of a large series have the bill 35 mm. or more long. Breeds in north-central Siberia.

4. *Schinzii* (C. L. Brehm).—Exactly resembles the last two in color, but averages notably smaller than *alpina*. Resident in the British Isles, the coast of Holland and the Baltic Sea, and unknown as yet outside this area.

5. *Arctica* Schiøler.—Resembles *schinzii* in smaller size, but differs in color from the three other Old World races in being even darker above with less or no rusty edgings, these buffy or dull ochraceous; consequently even more different from *sakhalina* in dorsal coloration than is *alpina*.

A summary of measurements is appended:

		Wing	Culmen
<i>sakhalina</i>	♂	108.5-125.5	31-41
	♀	114 -125.5	34-42
<i>alpina</i>	♂	109 -118	27.5-37.5
	♀	115 -125	32-40
<i>schinzii</i>	♂	104 -112	26.5-31
	♀	106 -121	28.5-33
<i>arctica</i>	♂	108 -113	26-27.5
	♀	112 -120	30-32

When we remember that immature birds in early fall have much shorter bills and that there are no color characters for the winter plumage of any of these subspecies, it will be obvious that the positive subspecific identification of a straggler to North America can be made only if the specimen were still in breeding plumage when shot. Adult specimens in winter plumage with very short bills could be confidently referred to either *schinzii* or *arctica*, with the probabilities favoring the latter, a migratory subspecies, rather than the former, a resident subspecies. No other Old World dunlin straggling to North America could even be suspected. No specimen of *centralis* Buturlin could ever be recognized as such anywhere, and I see no point in the formal naming of such intangible characters.

The alleged North American records for "European" dunlins follow:

1. District of Columbia (Auk, 1886, p. 140). Long since shown to be an error, and requiring no further discussion here.

2. Long Island, New York, Shinnecock Bay, September 15, 1892. See Young (Auk, 1893, p. 78), who states that the specimen was identified by F. M. Chapman as a European Dunlin. I do not know the whereabouts of this specimen, but note that Chapman omitted this record from his 'Guide to the Birds of the Vicinity of New York City,' 1906. The date of capture precludes the specimen being in breeding plumage, and this record should be regarded as doubtful until the specimen can be remeasured.

3. West Haven, Connecticut, ♀, September 29, 1904; wing, 114.5; culmen, 36.5. Obviously no grounds for even suspecting an Old World subspecies, on our present knowledge of size variation. See the able discussion by Sage and Bishop ('Birds of Connecticut,' p. 58), who do not record it as a European Dunlin. Their remarks might appropriately be applied to the Long Island record. Nevertheless this has been regarded as a Connecticut record on several occasions, and is so included in the last A. O. U. Check-list.

4. Chatham, Cape Cod, Massachusetts, August 11, 1900. First recorded by Howe and Allen ('Birds of Massachusetts,' 1901, p. 41); now mounted and on exhibition in the Boston Society of Natural History and kindly

loaned me by the authorities. This bird is an adult in worn breeding plumage. It was sexed as a female but is almost certainly a male, as the measurements show; wing, 108; culmen, 25.5. Its very small dimensions can apply only to *schinzii* or *arctica*. In general coloration the bird is an "Old World" dunlin at a glance. The margins to the feathers above are dull buffy, devoid of any rusty tone. As it agrees minutely with two specimens from East Greenland, collected in the first days of August, and as it is easily separable from specimens of *schinzii* in comparable plumage, I confidently identify this bird as *arctica* Schiøler.

5. Monomoy, Cape Cod, Massachusetts, August 8-16, 1936, adult ♀, collected by Ludlow Griscom, and presented to Boston Society of Natural History. On August 8, 1936, I took my ornithology class to the great flats on Monomoy, accompanied by Miss Juliet Richardson, Dr. and Mrs. Richard Tousey and Mr. David L. Garrison. The sharp eye of the last gentleman picked out, among various "Peep," a dunlin, which, on account of the remarkable date, was subjected to very careful scrutiny. I became suspicious almost at once that the bird belonged to some Old World subspecies, because of the heavy streaking below, and the entire absence of any cinnamon tone on the very dark upper parts. The bird proved to have lost one foot and appeared sick, as it occasionally "yawned" or "gaped" and would fall forward on its chest.

I returned to these flats the following Saturday, with a collecting pistol, accompanied by Mr. Garrison and also Professor S. A. Eliot, Jr., and Mr. Aaron C. Bagg. As I had not unreasonably hoped, the dunlin was still present, though appearing more lively and less sick, and was collected as speedily as possible. It proved to be in a most remarkable condition, obviously the result of disease. It is in slightly worn breeding plumage as regards the body or contour feathers, though one or two of the fresh gray feathers of the winter plumage are coming in on the back. The primaries, however, are still in the process of coming in, so that apparently this part of the spring moult lagged behind, while the tail feathers are worn to dirty brownish shreds, with no sign of any renewal whatever! The ovaries were so minute and granular, that the sex was determined with some difficulty, and the bird could not possibly have bred this year.

The measurements are: wing, 105 +, the longest primaries not fully grown in; culmen, 37.2. The coloration above and below is clearly that of typical *alpina* in slightly worn plumage, and the measurements indicate this larger subspecies. This specimen might conceivably be *centralis* Buturlin also, but I do not regard a subspecies as separable, no specimen of which possesses any character not common to specimens of other subspecies.

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MIGRATIONS OF THE AMERICAN BRANT
(*BRANTA BERNICLA HROTA*)

BY HARRISON F. LEWIS¹

THE Brant prefers, in general, haunts which are not those inhabited or frequently visited by man. It nests in the far north, migrates chiefly over the sea or over uninhabited lands, and usually feeds on tidal flats so extensive that it need not come near the shore. In consequence, our knowledge of the Brant and its ways has developed slowly and, although we no longer believe the fable that it is derived from a shell-fish, there are still many interesting details of its life history to be discovered.

In discussing the routes followed by the migrating Brant, I shall present observations relating only to the region between New York City and southern Baffin Island. South of New York City the migration of this species is principally a coastwise one, extending normally to the coastal sounds of North Carolina, while north and west of southern Baffin Island the routes followed by Brant are not well known and I can offer no new information about them.

It appears that the main body of Brant, after assembling in Great South Bay and lesser coastal waters of Long Island, New York, fly to Monomoy, Muskeget, and adjacent waters on the southeastern coast of Massachusetts. According to Dr. John C. Phillips (1) "the spring arrival of Brant at Monomoy may be said to begin about the second week in March, although sometimes they arrive the first week . . . The main concentration is between March 25 and April 20, and as a usual thing the Bay is nearly empty of birds by April 25." A letter, dated June 6, 1935, which I have received from Mr. Clarence L. Hawthaway, of Lynn, Massachusetts, an enthusiastic Brant hunter of long experience, indicates that Brant, while resting and feeding in this general region, may concentrate locally on favorite feeding-grounds at least as far west as "Great Island," between Hyannis and the mouth of Parker's River, and that in recent years Brant have spent a longer time in autumn in the harbor of Plymouth, Massachusetts, than they used to do. From Monomoy the majority of the Brant apparently fly directly to the waters of Northumberland Strait, which separates Prince Edward Island from the mainland of New Brunswick and Nova Scotia, in the southern part of the Gulf of St. Lawrence. Presumably the route taken leads up the Bay of Fundy and its northeastern arm, Chignecto Bay, and across the Isthmus of Chignecto. The time of arrival of the first Brant at

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Northumberland Strait in spring is commonly in the first week of April, and the numbers in that region increase steadily thereafter until they reach their maximum in the first week of May. Around the mouth of the Bay of Fundy some small groups of Brant are often deflected temporarily to one side or the other of the main route and are seen to pause for a while in the bays of the coast of eastern Maine, southwestern New Brunswick, and southwestern Nova Scotia. For example, Dr. Alfred O. Gross reports having counted, on May 24-26, 1935, two hundred fifty Brant that apparently were feeding in the sheltered harbor formed by Three Islands, near Grand Manan, New Brunswick, and adds that he was told that Brant visit these islands regularly every spring.

The existence of a minor migration route for Brant, leading from Long Island Sound northward across New England and southern Quebec to the St. Lawrence River, has been indicated by A. C. Bent (2) and E. H. Forbush (3), who adduced as their principal evidence the following observation, published by Dr. Louis B. Bishop (4): "Professor A. E. Verrill informed me that on May 17, 1914, he saw, with Mr. G. E. Verrill, many flocks of Brant flying north up the Housatonic Valley near the mouth of the Housatonic River; that most were high in the air, but some almost within gunshot; also that he saw others flying northwest while at Outer Island, Stony Creek, about May 22." There are indications of this overland migration route at other points farther north in New England. Thus, Mr. Aaron C. Bagg, of Holyoke, Massachusetts, wrote to me on May 3, 1935: "Brant use the Connecticut Valley very rarely since the turn of the century. The old-time hunters speak of seeing flocks occasionally. The only records of modern times that I know anything about are as follows. The late R. O. Morris of Springfield recorded a late record May 30, 1901, when he wrote, 'Observed a small goose at the lower end of Longmeadow that was probably a Brant.' On April 11, 1903, a young female was collected on the river near Northampton and is at present in the Springfield Museum collection. In 1928 (November 21), while watching a wedge of fifty Canada Geese or more at Holyoke, I discovered following at a short distance behind fifteen or twenty geese of smaller size that I marked down for Brant. Two Brant were shot near Westfield, October 13, 1931. At South Windsor, Connecticut, a short distance below our State line, a Brant or two were recorded March 28, 1931, by C. W. Vibert, a bird authority of many years' standing for that region. A flock of eighteen was observed there as early as March 8, 1932. They were seen by various members of the Hartford Bird Club and lingered thereabouts until March 25. At New Haven, which is not quite in the Valley but undoubtedly is on one of our migration lanes, 106 were counted May 17, 1933, by F. W. Loetscher, Jr., a reliable bird student, at that time attending Yale. These are about the only records we have for this species but un-

doubtedly there have been many others for the region and I agree with you that this is one of the minor migration routes for the species." In a subsequent letter, dated May 13, 1935, Mr. Bagg supplied the following additional record: "You doubtless will be interested in learning of a small flock of four Brant that flew up our Valley on May 10. When observed at Northampton they followed one of the bends in the river toward the west, going over to one of the tributaries, the Mill River, which leads in the north-west direction, as if heading in the direction of Lake Champlain."

Fortner, Smith, and Dole (5) say of the Brant in Vermont: "Rare migrant. Sight observations at St. Johnsbury, Wells River, and Woodstock." In a letter dated August 29, 1935, Mr. Wendell P. Smith has furnished me with the following additional information concerning his own observations of this species at Wells River: "October 12, 1921, forty-five late in afternoon: October 26, 1923, thirty in late afternoon: April 12, 1924, five flocks of perhaps twenty to twenty-five heard moving northward from 11.30 p. m. to 12.00 midnight."

The various observations cited may seem at first rather insufficient evidence of the existence of a regular, but minor, migration route of Brant across New England. The regular migration flights of large numbers of Brant across the Labrador Peninsula show, however, that this species may maintain regular overland migration flyways and that, when passing over such parts of their migration routes, they often fly so high that they may easily escape observation. There is, moreover, some evidence, now to be presented, of the arrival of Brant in spring on the lower St. Lawrence River by this cross-country route and of their departure from the lower St. Lawrence River over this route in the fall.

The principal feeding-grounds for Brant along the south shore of the estuary of the St. Lawrence River are at Kamouraska, which is about ninety miles below Quebec City, and at Ile Verte, which is about one hundred twenty-five miles below Quebec City and about opposite the mouth of the Saguenay River. On a visit to Ile Verte on April 24, 1930, I saw about seven hundred Brant. Local hunters informed me, as I recorded in my notes at that time, that the first Brant seen at Ile Verte in 1930 arrived there about April 8 and that both Brant and Canada Geese sometimes arrive there in spring by flying down the St. Lawrence River, that is, from the southwest, but that most of them at that season appear there coming overland, from a more southerly direction. In answer to a questionnaire sent to him, Mr. Victor Rivard, of Ile Verte, writing in April, 1935, stated that Brant were accustomed to arrive at Ile Verte from the south but that, up to the time of writing, none had arrived there in the spring of 1935. He also stated in the same communication that Brant were accustomed to depart southward when leaving Ile Verte in October and November; but that very few had been seen at that place in the autumn of 1934.

In reply to a similar questionnaire, Mr. Willie LaBrie, of Kamouraska, well known as a competent and reliable observer of birds, stated, on April 15, 1935, that he was not sure of the direction from which Brant came on their arrival at Kamouraska in the spring, but that when they left that place in the autumn they flew southwest. He added that there were only about one hundred Brant, divided into small groups, at Kamouraska in the autumn of 1934, and that none had arrived there up to the time of his writing in the spring of 1935.

Mr. C. E. Dionne (6) has published the statement that the Batture aux Loups-Marins, or Seal Islands, which are in latitude $47^{\circ} 14' N.$, longitude $70^{\circ} 26' W.$, are the approximate southwest limit of Brant on the St. Lawrence River, but local hunters tell me that, while this has been true in recent years, there was formerly a time when Brant were seen on the St. Lawrence as far up as Cap Tourmente, on the north shore, about twenty-eight miles below Quebec City.

To consider again the main northward flight of Brant, which proceeds by way of the Bay of Fundy and Northumberland Strait, it may be recorded as well known that the birds in this group spend the month of May in the southern and western parts of the Gulf of St. Lawrence. During that time they may be found scattered in various suitable harbors around Prince Edward Island, where, according to Mr. E. T. Carbonnell's statement as published by Forbush (7), they nearly always arrive in the night. They also spread northward along the eastern shore of New Brunswick where many shallow harbors and lagoons, such as the famous Tabusintac Lagoon, are admirably suited to their needs, and enter the Bay of Chaleur, near the head of which they are found on both its shores. At Shippigan Island, on the south side of the entrance to this great bay, Mr. Camille Guignard reported the first Brant in 1933 in the week ending April 8 and in 1935, in the week ending April 20. At New Richmond, Quebec, on the north shore of the bay, I saw five hundred Brant on April 22, 1927, and was told that they had then been there for at least a week. Other flocks of Brant, during April and May, frequent suitable shallow harbors, such as Malagash, Little Harbour, and Merigomish Harbour, on the north shore of Cumberland and Pictou Counties, Nova Scotia. In view of the regular occurrence of Brant in numbers in these harbors each spring and fall, as well as the frequent visits of smaller groups to the coast of the southwestern part of this province, the manner of occurrence of Brant in Nova Scotia cannot be considered merely "casual," as it is termed in the fourth edition of the A. O. U. Check-List (8).

Some flocks of Brant each spring fly out into the Gulf of St. Lawrence northeast of Prince Edward Island and visit for a time the Magdalen Islands, where two very large shallow lagoons provided, under normal

conditions, excellent feeding grounds for them. Their occurrence at these islands in both spring and fall was recorded by Cory (9). In 1924 I saw five hundred Brant at Grand Entry, Magdalen Islands, on May 18, one hundred twenty-five Brant at the same place on May 22, and twenty-five Brant between Grand Entry and Grindstone on the latter date. In 1933 I observed forty Brant at House Harbour, Magdalen Islands, on May 8 and fifty birds of this species between House Harbour and Grand Entry on May 9. After loitering in scattered flocks in the coastal waters of the Gulf of St. Lawrence, between Nova Scotia and the Gaspé Peninsula, Province of Quebec, during practically the entire month of May, the majority of the Brant resume their northward movement rather suddenly about the end of that month. Their departure from the Gulf is carried out chiefly in the first fifteen days of June, but may begin in the last week of May. In executing this part of their journey to their nesting-grounds, the Brant proceed northward to the north shore of the Gulf of St. Lawrence and there make a pause which for most of them is comparatively brief. Mr. W. B. Mershon has recorded (10) that many of the Brant from the Bay of Chaleur fly northward via the valley of the Grand Cascadepia River between June 3 and June 16, leaving the Bay of Chaleur about sunset. Presumably the birds using this route make a direct traverse from south to north across the Gaspé Peninsula. Apparently a large proportion of the Brant use a more easterly route, which leads them past the west end of the Island of Anticosti. As already published (11), I saw large flocks of Brant, totalling three thousand to four thousand birds, at Ellis Bay, Anticosti, on the evening of June 10, 1922. They flew in over the bay from the southward, cackling loudly, and passed on without alighting.

According to information furnished to me verbally on June 19, 1935, by Mr. Peter Wright, who has lived for many years at Pigou, near Cape Cormorant, on the north shore of the Gulf of St. Lawrence, the main stream of northward-flying Brant arrives at that shore in the vicinity of Cape Cormorant, in longitude $65^{\circ} 32' W.$, but the exact place of their arrival may vary within a few miles on different days. Mr. Wright thinks that this variation is governed by weather conditions. From Cape Cormorant, the flocks turn westward along the north shore of the Gulf, flying sometimes close to the land, sometimes a mile offshore. The flocks generally fly close to the water in recent years, but it was Mr. Wright's experience prior to the last four or five years that the last flocks of each year's northward migration used to fly high as they passed Pigou. A number of small flocks of Brant, however, regularly reach the north shore of the Gulf farther east, where it is bordered by the western half of the archipelago known as the Mingan Islands. The eastern limit of their regular annual occurrence in spring on this coast is at Havre St. Pierre, formerly known as Eskimo Point, which is about 86 miles

east of Cape Cormorant. There I saw a flock of eleven Brant on May 25, 1923, and other small flocks on various dates until June 1, 1923, the maximum number recorded in one day being twenty-seven on May 26. East of Havre St. Pierre Brant are, on the north shore of the Gulf of St. Lawrence, rare and accidental.

While tarrying for a time in spring in the vicinity of the western half of the Mingan Islands, Brant frequent, in small groups, not only the shallow bays along the mainland, but also the extensive reefs of limestone that border the southern sides of some of the islands. My earliest date for Brant in this region in any spring is May 20, 1925, when twenty were seen at Quarry Island. My latest date for them in this vicinity in any spring is June 13, 1923, when seven were seen on Niapisca Island. The largest number of Brant that I have seen alighted in this region in one day is 178, which were observed at Niapisca Island on June 2, 1927, but flocks of Brant containing a total of 225 individuals were seen migrating along the mainland shore near Mingan on June 9, 1921. The birds last mentioned, as well as all other flocks of Brant that I have seen in migration flight in this region, were traveling west, apparently to join the main flight near Cape Cormorant. In 1935, Brant were seen near Great Birch Island, in Birch Islands Bird Sanctuary, near Mingan, by Mr. George Maloney, the sanctuary caretaker, on four dates from May 21 to June 9. The largest number seen in any one of these observations was sixty-three on May 21.

The next place on the migration route of the Brant that requires special consideration is the Bay of Seven Islands. This is a sheltered body of water, about seven miles long and six miles wide, situated at the northwest angle of the Gulf of St. Lawrence, in latitude $50^{\circ} 12' N.$, longitude $66^{\circ} 25' W.$ In its entrance are six high, steep, rocky islands, one small island, and several rocks, but between the islands are broad, deep channels, giving easy access for shipping to the bay. The outer part of this bay is deep, but in the northern part are broad tidal flats suited to the needs of the Brant. North of the bay and in plain sight from it are ranges of wooded mountains reaching heights of 1300 to 1700 feet. No large stream flows into this bay, but the Moisie River, flowing from the north, debouches about fourteen miles east of it, and the Ste. Marguerite River, also flowing from the north, empties into the Gulf about five miles west of the bay. The fact that the Bay of Seven Islands is a notable point of concentration for the Brant on their northward migration was published by Townsend and Bent (12) and has been generally known for many years. Until very recently the first Brant at the Bay of Seven Islands in spring commonly arrived there each year at or before the middle of May. For example, I observed a flock of about 1100 Brant in the inner part of this bay on May 14, 1925. Mr. Ludger Boudreault, an experienced bird protection officer who was sta-

tioned at this place in the spring of 1930, reported that he saw the first Brant of the year there on May 5, an unusually early date.

While I have had little personal experience with these early Brant at the Bay of Seven Islands, beyond that just mentioned, the common opinions about them held by the hunters of Seven Islands village, who were accustomed to hunt Brant regularly in the spring prior to the passage of The Migratory Birds Convention Act, are sufficiently noteworthy to deserve mention here for what they are worth. According to these hunters, the early flight of Brant was a regular annual occurrence, quite distinct from the principal flight, which arrived there about the first of June. The early flight never contained more than a few thousand birds. These were reported to enter the bay by the southwestern pass, between all the islands and the western mainland shore, whereas the main flight of Brant entered the bay by the southeastern pass, between all the islands and the eastern mainland shore. Often the early flight had entirely left the bay before the main flight began to arrive. The birds in the early flight are said to have been so much darker in color than the birds of the principal flight that, while these French-Canadian hunters recognized that they were really Brant, or "bernaches," as they call the birds of the June flight, they seldom used that name for the birds in the early flight, but commonly referred to them as "les noirs," that is, "the black ones." In 1935 the local bird protection officer at Seven Islands, Mr. Christophe Doire, kept, under my instructions, a special watch, beginning on May 7, for the Brant of this early flight. I also watched for them at the Bay of Seven Islands on and after May 24, 1935. Neither of us saw anything of an early flight of Brant this year except one flock of five individuals which I saw entering the bay by the southwest pass on May 24.

Flocks of Brant that arrive on the north shore of the Gulf of St. Lawrence east of the Bay of Seven Islands, chiefly in the vicinity of Cape Cormorant, turn westward along that shore. As far as is known, most of them enter the Bay of Seven Islands by the southeast pass. According to all the information available, such flocks always enter this bay during daylight hours, chiefly in the morning. Some other flocks, however, turn northward at Matamek River, at the head of Moisie Bay, about twenty-two miles east of Seven Islands, for their overland flight across the Labrador Peninsula. Mr. P. A. Taverner, in 1928, observed two large flocks of Brant fly inland at Matamek River on the evening of June 5, after they had rested much of the day on the water in the head of Moisie Bay. On the next day, June 6, he observed another flock fly inland at this place and on June 8 he saw a flock of about one hundred Brant do the same thing. Captain Antoine Levesque, of Matamek River, wrote to me that he saw two flocks of Brant fly inland at that place in 1935, namely, a flock of sixty on June 10 and a

flock of one hundred on June 14. Local residents have told me that years ago some flocks of northbound Brant would turn inland at the mouth of the Moisie River and proceed directly up that river but that in recent years such flights have not been observed.

I have not succeeded in seeing the departure of migrating flocks of Brant from the Bay of Seven Islands when they continue their spring migration, but there can be no doubt that, on leaving this bay, these birds make a long flight overland. Local hunters tell me that the Brant always take their departure from this bay in the evening and that, when they are ready to leave, they fly upward in spirals until they attain a great height before they start northward toward the mountain barrier.

Where do the Brant go after they turn inland at the Bay of Seven Islands or at Matamek River? I know of only two places where Brant appear in spring as if at the end of an overland flight from the Gulf of St. Lawrence. These places are James Bay and Ungava Bay and it is probable that all Brant that leave the Gulf of St. Lawrence on their way to their nesting grounds direct their course first toward one or the other of these bays. The distance from the Bay of Seven Islands to the southern end of James Bay is 543 miles, while from the Bay of Seven Islands to Ungava Bay is 578 miles. Since Brant are by nature almost entirely maritime birds, it seems unlikely that they willingly alight during these long journeys overland. Indians of the Labrador Peninsula say that they sometimes see Brant on the lakes of the interior in the season of migration, but these are probably birds that have been forced down temporarily by adverse weather conditions.¹

According to reports received from local observers, the flight of Brant that arrives at Ungava Bay is much larger than the flight of this species that arrives at James Bay. Because of the small numbers of Brant seen on James Bay in the spring, it is certain that the main northbound flight of Brant does not proceed by way of that bay, as some accounts published in recent years would indicate. Hitherto our knowledge of the arrival of Brant in spring at Ungava Bay has been derived almost wholly from the observations of Lucien M. Turner, who resided at Fort Chimo, on the Great Koksoak River, about twenty-seven miles above its point of discharge into southern Ungava Bay, from August 6, 1882, to September 4, 1884. Part of a quotation about Brant, taken from Turner's notes and published by A. C. Bent (2) is as follows: "At Fort Chimo they arrive from the 20th of

¹ Mr. W. E. Clyde Todd has very kindly authorized the publication here of the following statement: "On June 7, 1917, late in the evening, we saw flocks of Brant flying northward, following the course of the Ste. Marguerite River. This was at the Grande Portage (33 miles north of Seven Islands Bay). They were flying fast and very high, above the tops of the hills on either side, and although the hour was toward nightfall, they showed no signs of stopping. They were not flying in regular formation, as do the Canada Geese and some other species."

May to the 20th of June. They fly past the station of Fort Chimo over the water in the Koksoak. At times they are as high as 100 yards, and oftener only a few feet above the water or running ice. They come at a time when it is almost impossible to get at them on account of ice, and if this is not present they fly too high. They follow the sinuosities of the river and only cross such points that they can see over. Thousands of them are seen every spring and never one of them in the fall. They are reported by the Eskimo to fly southward over Hudson Bay . . . They appear fatigued when they reach Hudson Strait, but with rapid beat of wing they pursue their course to the unknown regions beyond."

On August 20, 1935, I had the pleasure of an interview with Mr. J. W. Payne, an accountant in the employ of the Hudson's Bay Company who was then stationed at Blanc Sablon, Quebec, but who resided at Fort Chimo for seven years, from 1924 to 1930. Without knowing anything of Turner's observations of Brant at Fort Chimo, Mr. Payne gave me the following information about the occurrence of that species in that vicinity as he had observed it. Brant fly down the Koksoak River past Fort Chimo in early June. They generally arrive there in the evening and are usually observed passing in silent, low-flying flocks containing from fifty to one hundred thirty birds each. Their regular stopping-place in that region is in a big arm or inlet on the east side of the Koksoak River, below Fort Chimo and about twelve miles above the river-mouth. That part of the river is tidal and there are large flats in the inlet that are uncovered at low tide to a distance of about half a mile from the shore. No one lives near the inlet and the Brant are seldom hunted or disturbed there. Mr. Payne did not know of any other resting-ground for Brant about Ungava Bay. He did not know what the Brant eat when they are in this inlet, but he did not think that any eel-grass (*Zostera marina*) grows there. In fact, the only place about Ungava Bay where he knew that eel-grass grows is the estuary of False River, about twenty miles east of the mouth of the Koksoak River. The Brant generally stay at their resting-place in the inlet beside the lower Koksoak River for only two or three days in June, after which they continue their flight toward the north. In the fall a smaller number of Brant return past Fort Chimo, southbound, over the same route used in spring. They pass Fort Chimo on their southward migration about the end of September or the first of October and may then pass at any hour of the day. There is not much hunting of Brant near Fort Chimo in the fall.

It will be noted that when northbound the Brant both depart from the Bay of Seven Islands and arrive at Fort Chimo in the evening. Probably they fly up the Ste. Marguerite River or the Moisie River to the vicinity of the height of land and there cross directly to streams belonging to the Koksoak River system, by descending which they reach Fort Chimo. Such a

route, because of sinuosities in the streams followed, is probably at least six hundred miles long. If it is made in one non-stop flight, in twenty-four hours, the speed of flight must be about twenty-five miles an hour. G. Webster, manager of the Hudson's Bay Company Post at Fort McKenzie, on the Koksoak River one hundred fifty miles south of Fort Chimo, has reported in a letter received in the spring of 1936 that Brant to the number of three or four thousand fly down the Koksoak past Fort McKenzie about June 10, but that this species is not seen there at any other time of year.

What may be the next regular stopping-place of the northbound Brant after they leave the Koksoak River I do not know, although it may be remarked that J. Dewey Soper (13) saw "a number of migrants" of this species at Lake Harbour, on the eastern part of the south coast of Baffin Island, in late June, 1931. It seems doubtful if the birds that take the Koksoak River route include those that are seen in southwestern Baffin Island in spring. Bernhard Hantzsch (14) has recorded that, near Port Burwell, Quebec, on the eastern side of Ungava Bay, Brant are not rare migrants, often appearing in considerable flocks. The manager of the Hudson's Bay Company Post at Leaf River, on the southwest coast of Ungava Bay, has reported in a letter received in the spring of 1936 that there is a large coastwise flight of Brant in that vicinity on both the northward and the southward migrations, but that only a few small flocks pause to feed there. According to Wells W. Cooke (15), on their nesting grounds in latitude $82^{\circ} 33' N.$, in 1876, Brant arrived June 9 and the first Brant eggs were found June 21. These observations were made in northern Ellesmere Island.

For information concerning the movements and numbers of Brant in James and Hudson Bays I am greatly indebted to Mr. J. W. Anderson, district manager of the James Bay District of the Hudson's Bay Company, who, at my request, has repeatedly and painstakingly gathered information about Brant at the various trading posts in his district. The information thus gathered, which Mr. Anderson has sent to me from time to time, is my authority for the following remarks about Brant in the region of James and Hudson Bays, except in the few cases where some other authority is explicitly stated. Prior to very recent years, Brant appeared fairly regularly in small numbers in spring at Rupert's House, Eastmain, and Fort George, which are posts on the east coast of James Bay, and which I have named in order from south to north. At Rupert's House it is said that they arrived from the south, that is, from overland, about May 1, and that they departed for the north about the end of May. At Eastmain they are said to have arrived about May 25 from the south, that is, coastwise, and to have departed for the north and northwest after feeding in that vicinity for two or three weeks. Near this post they were commonly observed in flocks

of from two hundred to three hundred individuals. At Fort George, it is stated, they arrived about the middle of May from the east, that is, descending the Fort George River, and without stopping flew on in a northerly or westerly direction. It will be observed that the dates given for the arrival of Brant in spring at these three posts on James Bay are all earlier than the time of arrival of the principal flight of Brant at the Bay of Seven Islands, on the north shore of the Gulf of St. Lawrence.

At Charlton Island, which is in the southern part of James Bay, about twenty-two miles west of the east coast, the occurrence of Brant in the spring was, it is said, only casual.

Indians of the vicinity of Attawapiskat, on the west coast of James Bay, claim that formerly Brant occurred in "large numbers" in spring on the northeast point of Akimiski Island, which is a large island near Attawapiskat, but none of these Indians had visited that vicinity for some years. This claim should be received with caution. At Great Whale River, on the east coast of Hudson Bay, Brant are now seldom seen in spring, but in each year from 1930 to 1933 several large flocks, northward bound, passed there between June 6 and June 9. On the Belcher Islands, a large group of islands lying about fifty miles offshore on the east side of Hudson Bay, Brant are said to have occurred until recent years in considerable numbers every spring. In the spring of 1935 the status of Brant at the points mentioned, except Akimiski Island, from which there is no information, was as follows: Rupert's House, none; Eastmain, only two flocks (size not stated); Fort George, none; Charlton Island, six Brant; Great Whale River, two Brant; Belcher Islands, none. The total of these reports for the spring of 1935 is two flocks and eight other birds. J. Dewey Soper (16) has recorded three small flocks of Brant at Gordon Bay, southern Baffin Island, on June 21 and 22, 1926, and, in a later paper (13), has stated that this species was a common migrant at his Camp Kungovik, near Bowman Bay, on the west coast of southern Baffin Island, from June 7 to 24, 1929, and that it there fed on the tundra. George M. Sutton (17) has recorded the arrival of Brant at Southampton Island, at the north end of Hudson Bay, on June 18 and 19, 1930, and the discovery on that island of a nest containing five fresh eggs of this species on June 25, 1930.

At this point I wish to turn for a moment from the reporting of observed facts to what is admittedly theory. It seems quite likely that the Brant that fly across New England and southern Quebec, from Long Island Sound to Kamouraska and Ile Verte, on the south shore of the estuary of the St. Lawrence River, are the same birds that compose the early flight of Brant arriving at the Bay of Seven Islands, at the northwest angle of the Gulf of St. Lawrence, in mid-May. This identity appears probable because the early flight at the Bay of Seven Islands enters the bay from the south-

west, whereas the main flight from the southern part of the Gulf of St. Lawrence enters that bay from the southeast, because the early flight at the Bay of Seven Islands arrives there before Brant are known to have left the Bay of Chaleur or the southern part of the Gulf of St. Lawrence, and because the flight of Brant at Kamouraska and Ile Verte and the early flight at the Bay of Seven Islands appear to have shrunk simultaneously, in the last year or two, to nearly nothing. It also seems worth suggesting that the early flight of Brant at the Bay of Seven Islands, which often leaves that bay before the main spring flight of Brant arrives there, is identical with the flight of Brant seen in spring in James Bay. Reasons for this suggestion are that the time of departure of the early flight of Brant from the Bay of Seven Islands and the time of arrival of Brant in spring on the east coast of James Bay correspond fairly well, that the Brant arriving at James Bay in May cannot belong to the principal flight of Brant at Seven Islands because that flight does not arrive at Seven Islands until after the Brant are at James Bay, that the early flight of Brant at the Bay of Seven Islands, leaving there in May, apparently does not go to Fort Chimo, where Brant commonly arrive in June, and that the early flight at the Bay of Seven Islands and the spring flight at James Bay appear to have shrunk simultaneously, in the last year or two, to nearly nothing.

It also seems probable that the flight of Brant visiting the east coast of James Bay in the spring was the flight that supplied the breeding birds of southwestern Baffin Island, Southampton Island, and possibly other islands at the northern end of Hudson Bay. The larger body of migrants that goes north by way of Ungava Bay somewhat later in the season is presumably the breeding Brant of the more northern Arctic islands. If the hunters at Seven Islands are correct in maintaining that the birds in the early flight of Brant at that place were easily distinguishable from the birds in the main flight by morphological characters, then the group of Brant migrating north by way of the Connecticut River, Ile Verte, Seven Islands, and James Bay, and having breeding grounds around the north end of Hudson Bay, more or less distant from those of the majority of the Brant of eastern North America, may have become sufficiently differentiated from other Brant to form a recognizable race. However that may be, this smaller group of Brant, with the more western spring migration route, appears to be nearly extinct at present.

As for the southward migration in the fall, it may be said that in general it follows, in the reverse direction, the routes travelled by the Brant in spring, but there are exceptions to this statement along some parts of the way.

The southward flights of Brant in autumn past Leaf River, on Ungava Bay, and Fort Chimo, on the Koksoak River, have already been mentioned.

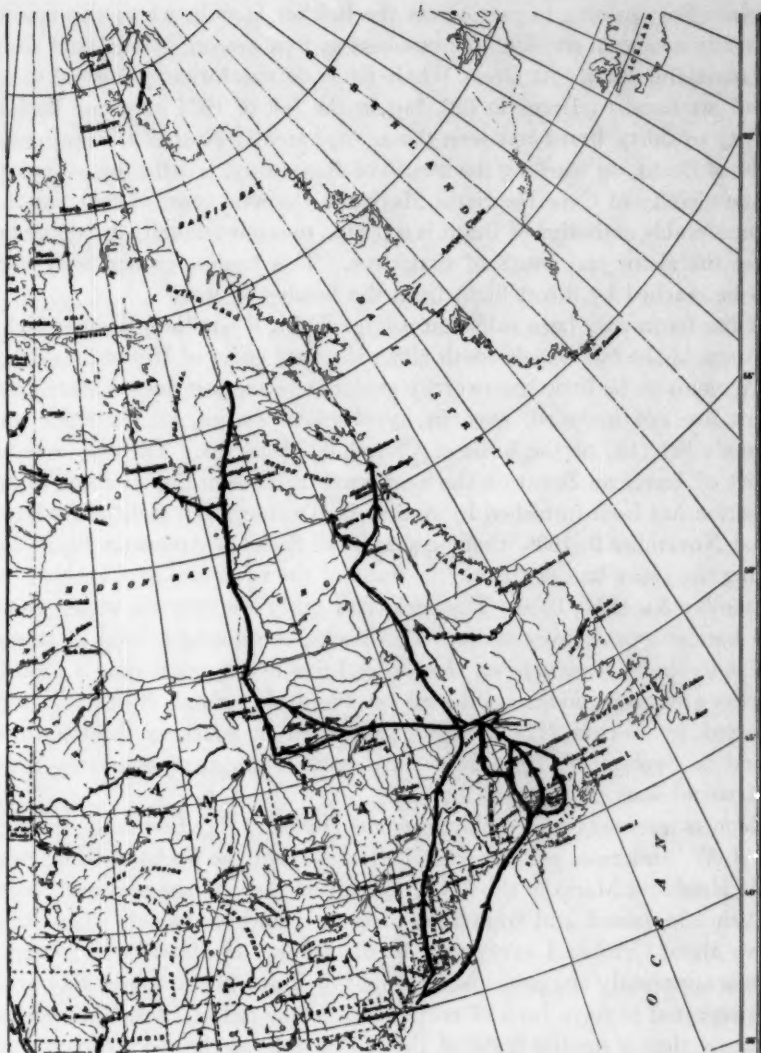


FIG. 1.—Spring migration routes of the American Brant.

The heavy lines indicating migration routes represent an attempt to present on a map available information on the subject. Uncertainty in various degrees concerning some parts of these routes is indicated in the accompanying text.

There is a southward movement of Brant in fall along the east side of Hudson Bay, passing in part across the Belcher Islands, where this species normally occurs in considerable numbers at that season, and in part along the mainland coast. At Great Whale River, it was formerly normal to see about six hundred Brant in fall, but in the fall of 1934 only one flock of twenty to thirty Brant was seen there. Apparently most of the southward flight of Brant, on reaching the mouth of James Bay, is deflected westward, to the vicinity of Cape Henrietta Maria, on the west coast of that bay, for a considerable gathering of Brant is reported to occur annually in September along the shore just south of that cape. This feeding-ground may very well be reached by direct flight from the Belcher Islands.

It has frequently been said that a large flight, if not the principal flight, of Brant in the fall travels south along the west coast of Hudson Bay, but there seems to be little trustworthy evidence to support such a statement. Brant are not included, even in hypothetical status, in Taverner and Sutton's list (18) of the birds of Churchill, Manitoba. The only reliable report of American Brant on the west coast of Hudson Bay to come to my attention has been furnished by Arthur C. Twomey who states, in a letter dated November 9, 1936, that he saw small flocks of American Brant following the shore line of the bay in front of the town site at Churchill, on September 5 and 10, 1936. The flocks flew fairly low over the water, about two hundred yards from shore. Two flocks, containing a total of thirty-five individuals, were seen on the 5th and five flocks, containing a total of seventy-two individuals, were seen on the 10th. Small flocks of Brant reported by Sutton (17) as flying westward in southern Southampton Island in September, 1929, may have been following a migration route that would lead them past Churchill.

Reports received from employees of the Hudson's Bay Company, through Mr. J. W. Anderson, contain some indication that the flocks of Brant near Cape Henrietta Maria in the fall proceed from there to the northeast point of Akimiski Island and from that place to Charlton Island, where they arrive about October 1 every year to the number of about two thousand. This is apparently the principal fall flight of Brant in the James Bay area. It is reported to have been of normal size in the fall of 1934. There is at the same time a smaller flight of Brant that follows the more direct route south along the east coast of Hudson and James Bays, past Fort George, Eastmain, and Rupert's House. The birds in this flight often stop near Eastmain for two or three weeks in late September and early October, as they do in spring. Various cross-currents and more or less erratic flights about James Bay, which contains many islands and extensive tidal flats, seem to link these two main flights in that region. From southern James Bay the Brant presumably fly overland to the estuary of the St. Lawrence River.



FIG. 2.—Autumnal migration routes of the American Brant.

The heavy lines indicating migration routes represent an attempt to present on a map available information on the subject. Uncertainty in various degrees concerning some parts of these routes is indicated in the accompanying text.

Since the autumn flight of Brant in the James Bay region, although not very large, seems to be a good deal larger than the spring flight of this species in that region, and since the reverse condition is reported at Fort Chimo, it is probable that some of the Brant that fly north via the Koksoak River return southward by way of Hudson and James Bays. At what point the southbound Brant from Ungava Bay and James Bay arrive at the estuary of the St. Lawrence River I do not know. Their route in fall on this part of their journey appears to lie farther west than the one they follow in spring, for they are seldom seen in autumn at the Bay of Seven Islands, or along the north shore of the Gulf of St. Lawrence east of that bay. A small flight of Brant still appears in fall at Ile Verte and Kamouraska, on the south shore of the St. Lawrence estuary, and presumably flies overland from that vicinity to Long Island Sound.

The main autumnal flight of Brant proceeds south via the lagoons on the east coast of New Brunswick, and the shallow harbors of Prince Edward Island and the Counties of Cumberland and Pictou, in Nova Scotia. There is normally a considerable migration of Brant to these places through the Bay of Chaleur in October and early November, and Forbush (3) states, on the authority of Mr. R. D. Ware, that these birds reach the bay by a flight across the Gaspé Peninsula. Other flocks of Brant may reach the southern part of the Gulf of St. Lawrence by flying between the Gaspé Peninsula and Anticosti. A part of the flight visits the Magdalen Islands in the fall as well as in the spring. From Northumberland Strait, at the southern end of the Gulf of St. Lawrence, the main flight of Brant apparently recrosses the Isthmus of Chignecto, flies down the Bay of Fundy, and continues on by sea to the waters south of Cape Cod and subsequently to the bays about Long Island, where the vanguard may appear as early as mid-September, although the maximum abundance is usually in November.

From May 24 to June 21, 1935, I was at the Bay of Seven Islands, on the north shore of the Gulf of St. Lawrence, for the express purpose of watching the northward migration of the Brant. One flock of five birds was seen entering the bay from the southwest on May 24, but the principal flight, coming from the southeast, occurred at this point only from May 31 to June 14, both dates inclusive. During the period of observation I boarded in the village of Seven Islands, about two miles north of Pointe aux Basques, the eastern entrance point of the bay, which was selected as the best place for observing the Brant migration. Each morning I walked from my boarding-place to the beach at Seven Islands wharf and then followed the beach to Pointe aux Basques, so that, if any Brant should enter the bay so early, I could see them, if there were enough light, even if I had not yet reached the point itself. The time of beginning observation at Seven Islands wharf varied during the period of Brant migration, from 3.01 a. m.

to 3.55 a. m., and the time of my arrival at Pointe aux Basques varied from 3.47 a. m. to 4.37 a. m. during that period. The earliest flock of Brant observed on any day passed Pointe aux Basques at 4.18 a. m. on June 2.¹ I continued observation each day at Pointe aux Basques until about 2.00 p. m., thus including in my hours of observation the part of the day when the majority of the Brant entered the bay. Mr. Christophe Doire, the local bird-protection officer, usually visited the inner part of the Bay of Seven Islands by motorboat each morning, to make sure that the numbers of Brant there were not in disagreement with our observations at Pointe aux Basques. At about 2.00 p. m. each day he replaced me at the post of observation on Pointe aux Basques, where, under my instructions, he continued until sunset, the watch for migrating Brant. Local hunters, who took much interest in this work, assured me that the majority of the incoming Brant arrived at the Bay of Seven Islands in the morning and that none ever arrived there between sunset and dawn, and all my observations were in agreement with these views.

Pointe aux Basques is not a narrow point or spit, but is merely a rounded right-angle turn in a fine sand beach bordering an extensive tract of low sandy land. The outer part of the point is bare of trees, so that an observer there has a clear view along shore for miles in both directions, but the base of the point is covered with mixed woods which continue over the country to the northward. South of the point, at a distance of two-thirds of a mile, is a large rocky island, 500 feet high, called Great Basque Island. The incoming flocks of Brant all flew from the east over the passage between this island and Pointe aux Basques, with the exception that a few flocks cut over the tip of the point, two or three even passing so far back that they flew above the woods, but in plain sight of an observer stationed on the point. The Brant that flew above the water were never on the side of the passage toward the island, but always on the side toward the mainland, because they had to turn about Pointe aux Basques to enter the bay and the closer they flew to the point, the shorter was their route. A good deal of fog was experienced this year at this place during the period of the Brant migration, but there were very few minutes at any time during the observations when it was so foggy that Great Basque Island was not visible from Pointe aux Basques. These favorable conditions of observation, combined with the fact that most of the flocks of Brant contained less than fifty birds each, while the largest flock contained less than two hundred birds, made it comparatively easy to observe and count the Brant as they passed. A record was made of the size of each flock entering the bay and the time

¹ Atlantic Standard Time, which is the time of the meridian of 60° W. and is one hour earlier than Eastern Standard Time, is used for all my records at Seven Islands involving reference to the hour of the day. As the Bay of Seven Islands is in longitude 66° 25' W., Atlantic Standard Time is about 26 minutes earlier than the local mean time at that place.

when it passed Pointe aux Basques. The total number of flocks recorded was 155. No Brant were ever seen to fly out of the bay.

The earliest flock of Brant seen to enter the Bay of Seven Islands in any day passed Pointe aux Basques at 4.18 a. m. on June 2. The latest flock of Brant recorded in any day passed that point at 7.45 p. m. on June 12, but

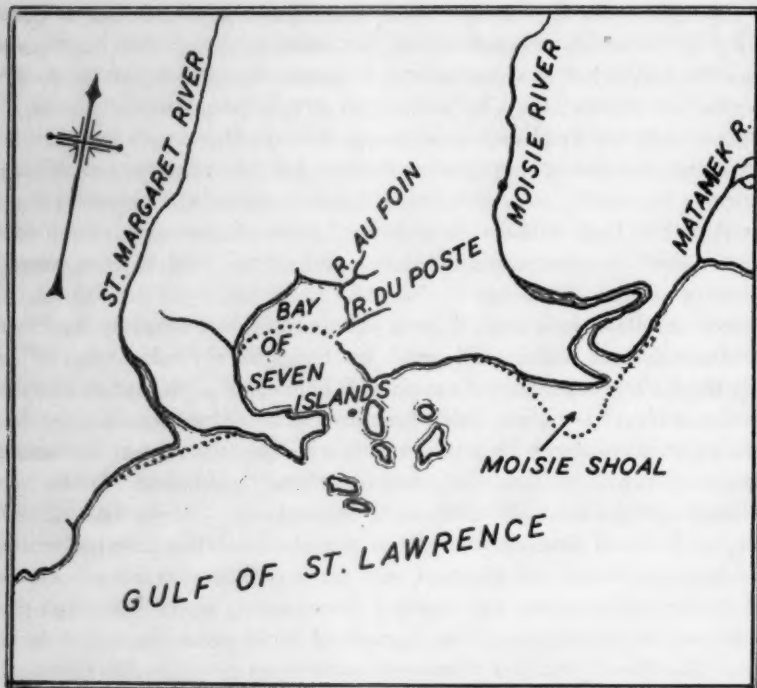


FIG. 3.—Vicinity of Bay of Seven Islands.

this is the only flock seen to enter the bay later than 5.30 p. m. The number of flocks entering the bay before 10.00 a. m. was 114, or 74 per cent of the total. There was a noticeable tendency for the larger part of the day's migration to arrive fairly early, after which there would be a lull for two or three hours, then one or two flocks, frequently rather large, about 12.00 or 1.00 o'clock, then only a few small, scattered flocks during the afternoon. Incoming flocks seldom flew at an elevation of more than one hundred feet and were often rather close to the water. Sometimes they flew in long files, one bird behind another, sometimes in one or more lines at right angles to the line of flight, with the birds abreast, sometimes in ragged bunches. Perhaps the commonest formation was a long line of birds abreast, with a

group of birds bunched irregularly somewhere along the line. The formations of the flocks frequently altered as they flew. Several times individual Brant were observed, just after they had passed Pointe aux Basques and arrived at a position from which they could see the broad expanse of the Bay of Seven Islands, to make a sharp downward swoop at an accelerated speed, followed by horizontal advance at the new level. It looked like a leap of exultation at beholding again the desired haven and resting-place; perhaps it was. The flocks of Brant were usually silent as they passed Pointe aux Basques, but occasionally a few birds uttered their vigorous, resonant note. A few flocks were noisy.

Mr. Doire told me that he had never known Brant to alight near Pointe aux Basques before entering the bay, but I observed that they did so in the following instances. A flock of thirteen Brant, when first noticed by me, at 4.55 a. m. on June 3, in fine, calm weather, was resting on the water off the point. These birds soon rose and flew into the bay. At 5.25 a. m. on June 6, in foggy weather, with a light southeast wind, a flock of twelve Brant, after passing Pointe aux Basques, wheeled about and, after making one pretended attempt at alighting and then circling around again, alighted in the lee of the point, among some Red-breasted Mergansers. Here they were joined, fifteen minutes later, by another incoming flock containing five Brant. The united flock worked along the shore of the point, sometimes swimming close to shore, sometimes walking on the lower part of the sandy beach. They seemed to be looking for food, but there was little or none there for them. At 6.40 a. m., the fog having cleared a good deal, they took flight and proceeded into the bay.

Formerly the extensive tidal flats in the Bay of Seven Islands produced great stands of eel-grass, which formed an abundant supply of nutritious food for Brant resting in the bay. This presumably helped to put them in good condition for the long flight overland from that place to James Bay or Ungava Bay. In May and June, 1935, I made two visits in search of eel-grass, to the flats referred to, and travelled over them for miles, but did not find one living eel-grass plant. The eel-grass here, as at most places along the Atlantic coast of North America where it was formerly abundant, had died away since 1930 until almost none was left. That there was a small quantity of living eel-grass somewhere around the bay was attested by my finding a few diminutive green eel-grass plants washed up on the beach on June 13, but there certainly was very little of it. The migrating Brant coming into the bay, presumably hungry and weary, were not to find any appreciable quantity of their favorite food there and their only hope lay in pushing on as soon as possible on their journey of some six hundred miles across the rough Labrador Peninsula, in an attempt to reach Ungava Bay before their strength gave out. That they were leaving the Bay of Seven

Islands soon after their arrival, instead of resting there two or three days as they used to do, is indicated by the fact that on none of his morning trips by boat into the inner part of the bay to look for them could Mr. Doire find more than a few, generally only a small part of the number known to have entered the bay on the previous day. Since the disappearance of most of the eel-grass, the preferred food of the Brant, along the eastern coast of North America, there has been a great and very evident decrease in the numbers of Brant frequenting that coast. It seems reasonable to suppose that the disappearance of the eel-grass has been responsible to some extent, at least, for the accompanying diminution in the numbers of Brant.

Because of the reduction in the numbers of these birds, special care was exercised to obtain as accurate a count as possible of the Brant entering the Bay of Seven Islands in the spring of 1935. The small size of the flocks as they arrived at the bay made it possible to record their numbers with reasonable accuracy. Of the 155 flocks of Brant recorded, 128, containing 2200 birds, were flocks of less than 50 birds each; 19, containing 1278 birds, were flocks of from 50 to 99 birds each; and 8, containing 1030 birds, were flocks of 100 or more birds each. No single birds were observed, but five "flocks" containing only two Brant each were recorded. The largest flock noted, which arrived at 7.05 a. m. on June 10, was estimated to contain 170 birds. The following table shows the variation from day to day in the numbers of Brant observed to arrive at the Bay of Seven Islands and the weather conditions predominant each day.

Date	Weather	Number of Brant	Number of flocks	Average number in a flock
May 31	Fine, clear, wind S.	5	1	5
June 1	Fine, clear, wind S. W.	28	3	9
June 2	Fine, partly cloudy, wind S.	272	11	25
June 3	Fine, partly cloudy, wind S. E.	524	21	25
June 4	Cloudy, wind S. E.	1075	37	29
June 5	Cloudy, foggy, wind S. E.	332	12	28
June 6	Cloudy, foggy, wind S. E.	91	7	13
June 7	Cloudy, foggy, wind E.	197	6	33
June 8	Cloudy, foggy, gale from E.	485	18	27
June 9	Cloudy, foggy, wind S. W.	557	8	70
June 10	Partly cloudy, calm	682	13	52
June 11	Cloudy, foggy, rain, gale from E.	18	2	9
June 12	Cloudy, foggy, rain, wind E.	45	3	15
June 13	Fine, clear, wind S. W.	63	7	9
June 14	Partly cloudy, showers, wind S. E.	129	5	26

The total number of Brant in this record, plus five seen on May 24, is 4508, of which 441 were recorded by Mr. Christophe Doire, whose period of observation was the part of the day when incoming Brant were least to be

expected, and 4067 were recorded by me. As all records were made on a conservative basis when precise counts were not possible, there is no reason to think that the total number of Brant that entered the Bay of Seven Islands in the spring of 1935 was less than the number above stated. Any possible errors in estimating numbers of Brant must be considered as making possible a greater, not a smaller, actual number of birds. Most of the flocks containing less than fifty birds each were counted with absolute accuracy. For all flocks of this size-group an allowance of 3 per cent of possible error is very generous.

For the flocks containing from 50 to 99 birds each an allowance of 10 per cent of possible error is sufficient, as is also an allowance of 15 per cent of possible error for the flocks containing a hundred or more birds. When these allowances for possible error in estimating are included, there results a possible total of 4900 Brant in the flocks observed. We may increase this again by making another allowance of 10 per cent for possible flocks entering the bay without being observed at all, though I have no evidence that there actually were any such flocks. This gives a figure of 5444 as the theoretically greatest number of Brant that may have entered the Bay of Seven Islands in the spring of 1935.

Consideration must also be given to the route that turns inland at Matamek River, where, in fragmentary and unorganized observation, Captain Antoine Levesque saw 160 Brant start their overland flight in 1935. After the migration of Brant at the Bay of Seven Islands had ended for the year, I went to Matamek River and interviewed Captain Levesque concerning his observations of migrating Brant at that place. As a result of the information thus obtained, I believe that, while the data are admittedly very unsatisfactory, the number of Brant that turned inland at Matamek River in the spring of 1935 was not more than 1000 at most. I also visited Moisie, at the mouth of the Moisie River, and interviewed suitable persons there and elsewhere with a view to ascertaining if any Brant had ascended the lower reaches of the Moisie River in the spring of 1935, but I was unable to satisfy myself that any had done so.

If we add 1000, representing the possible number of Brant turning north at Matamek River, to the possible total of 5444 Brant turning inland at the Bay of Seven Islands, we obtain only 6444 as the total number of Brant passing through these two migration channels in the spring of 1935. This figure corresponds as well as could be expected with the number of Brant passing through Nova Scotia, Prince Edward Island, and New Brunswick in the spring of 1935, as indicated by weekly counts made by twenty-seven selected observers stationed at points favorable for such work and reporting to the National Parks of Canada, Department of the Interior.

From Mr. Clarence Cottam, of the United States Biological Survey, Mr.

Charles A. Urner, Dr. William Tod Helmuth, 3d, Mr. William Vogt, and Mr. Seth H. Low, to all of whom I am greatly indebted, I have received information indicating that the number of Brant that wintered on the Atlantic coast of the United States in the winter of 1934-35 was between 15,000 and 45,000. Their excellent data seem to indicate clearly that these wintering Brant were not less than 15,000 in number.¹ If not more than about 6500 of these migrated north in spring through the Maritime Provinces of Canada and along the route that passes Matamek River and the Bay of Seven Islands, by what flyway migrated the more numerous remainder, which were not observed in those places?

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¹ The number of Atlantic Brant wintering on the eastern coast of the United States a year later, in January, 1936, was estimated by the Biological Survey to be 47,900. Mr. Charles A. Urner reports at least 25,000 of this species at Absecon Bay and Lake Bay, New Jersey, in December, 1935.

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GENERAL NOTES

How far can a bird be seen?—To judge distances accurately by sight is very difficult, but people frequently make statements as to how far they see an object across the water or in the air above, without considering how large it would appear at the distance stated. In order to judge by sight how high birds fly, an observer should know how far birds of such or similar sizes can be seen. Birds cannot be seen as far away as most persons believe. The visibility of a bird depends upon its size, but the amount of light, clarity of the atmosphere, character and contrasting color of the background and the acuity of vision of the observer are also important determining factors.

The following distances of the visibility of birds were determined either by direct measurement or by using a proportionately sized model and estimating the distances. A model of a Golden Eagle with outstretched wings, one-fifth natural size, painted black, was hoisted atop a tall flagpole and measurements were made of several visual distances. Cross-checking was also done by using models seen by the diminishing view of 8-power binoculars, a calculation which agreed closely with the direct measurements. The naked eye used, or ordinary vision with eyeglasses, was my own, which is more acute than the average person's, and gives a Snellen test of 38/20 (reading accurately at 38 feet the letters intended to be read at 20 feet), a visual acuity of 190 per cent.

A hummingbird on a telegraph wire appears as a mere dot at a distance of 100 feet; but a swallow can be recognized at that distance, and appears as a dot at 250 feet. Some birds can be heard much farther than they can be seen, as the Goldfinch announces its coming before it comes into the visual field at about 200 feet away. A Black-throated Green Warbler revealed its identifying colors at a 40-foot distance, but at 100 feet would be mistaken for a leaf and at 150 feet was only an inconspicuous dot on a branch. A perching Cedar Waxwing can be identified by its shape and position at 100 feet, shows definite form at 200 and becomes a little dot at 450 feet. A Robin flying at a distance of 150 feet shows its red breast distinctly and when perching in bright sunlight this coloration is visible at 200 feet. The Robin can be identified at 250 feet by its shape and by its position on a branch, the tail being just visible; at 350 feet it can be recognized as a perching bird, but appears as a dot at 500 feet, while at 750 feet it would be noticed only by acute eyes. Beyond this distance the perching Robin would not be seen. A flying Robin is recognized as such at 500 feet, is seen as a fluttering bird at 600, a moving dot at 800 and becomes invisible at about 850 feet. A Crow can be seen about twice as far as a Robin.

A Golden Eagle of average size exhibits its fan-shaped tail to the naked eye up to approximately 1500 feet, thereafter as a band and then as a dot at 2000 feet. The eagle is readily seen as a soaring bird at 3000 feet, is visible as a bird at 5000, loses its elongate breadth at 6000 feet to become a round dot scarcely noticed at 7250 feet; it is visible to only the best eyes at 7750 and becomes invisible at 8750 feet distance. A Golden Eagle a mile away appears as a minute soaring bird, and at a mile and a half as but a mere speck in the sky which few persons would notice.

A Turkey Vulture, according to a proportionate estimate, could be seen as a soaring bird as far as 4700 feet, but at about 6300 feet would change in appearance from a moving elongate figure to a round dot in the sky, and at a mile and a quarter would scarcely be recognized as a bird by any untrained eyes. Oblique views of the spread wings decrease their visibility. A Broad-winged Hawk could be identified

probably as a hawk at a half a mile, but at 3000 feet would appear as only a dot invisible a short distance farther away. The distance visibility of other birds can be estimated by similar procedure. A broad-winged bird is better visible than one with narrow wings, a perching bird with a rounded profile better than one with a long narrow outline; a flat view of the extended wings better than an oblique aspect. Looking toward the source of light, as the sun, diminishes the visibility by halation, and by glare into the eyes.

When estimating the vertical heights of birds it is remembered, according to the sine of the angle of elevation, that with an angle of 19 degrees the height is approximately one third the hypotenuse; with 30° it is one half; 48°, three fourths; with 54°, eight tenths, and with an angle of 65° the vertical height is 90 per cent of the oblique visual distance. These ratios with the estimated visual distances permit a close estimate of the distances a bird is flying above the ground.

This research is not a consideration of the *recognition* of distant birds, which depends in addition upon relative shapes, flight actions, perching positions, habits and other factors.—HAROLD B. WOOD, M.D., 3016 North 2d St., Harrisburg, Pa.

Hailstorms and Avian Mortality.—A violent hailstorm occurred at Ithaca, New York, on May 19, 1936. The storm, which lasted from 12.45 to 1 p. m., was accompanied by high winds and rain. A half hour after the storm, hailstones as large as marbles were lying several inches deep in small gullies and depressions. During the storm, one of my students, Daniel Embody, picked up a Flicker (*Colaptes auratus*) lying on the local golf course. The bird was warm; the extended tongue hung an inch from the bill. It was quite apparent that the Flicker had been killed by hailstones. Embody saw another Flicker lying along the roadside. A thorough search by the writer and four students a few minutes later in this same neighborhood failed to locate this second bird. It had apparently not received a fatal blow. No other casualties were noted, although a search was made. The Flicker was carefully skinned. A bruise on the right thigh and two clots on the skull indicated where the bird had been struck by the hail. The gullet and stomach contained about sixty ants (*Lasius* sp.) and eleven seeds of staghorn sumach. Evidently the bird had been feeding at the time of death. It was a male and weighed 140 grams.

On July 3, 1936, press reports described a slashing wind, hail and rainstorm at Rome, New York. Hailstones larger than marbles lay in streets four to six inches deep in places an hour after the storm. A number of birds were reported to have been killed by these hailstones.

Gates (Science, n.s., vol. 78, pp. 263-264, 1933) has recorded high mortality among birds, especially Scarlet Tanagers and Bob-white, at Baton Rouge, Louisiana, during a severe hailstorm on April 20, 1933.—WM. J. HAMILTON, JR., Cornell University, Ithaca, N. Y.

Notes from northern Idaho.—The unusual abundance of certain species of birds in the vicinity of St. Maries, Benewah County, Idaho, during the past summer is worthy of comment.

LITTLE FLYCATCHER, *Empidonax trailli brewsteri*.—While by no means rare, this species is always associated in my mind with the edges of alpine meadows and willow-bordered streams at high altitudes in the mountains. During the latter part of last May and to some extent throughout the early summer, they were to be found in almost every willow thicket in this locality. Even in the semi-arid "Palouse Country" and the lower Clearwater Valley they were occasionally met with. On two different occasions in late May I noted a pair in a single clump of willows sur-

rounded by miles of open wheat fields, while the only water nearby came from a tiny spring which had been piped into a horse-trough. Along two miles of cottonwood and willow-bordered dike adjacent to the town of St. Maries I saw or heard not less than fifteen, in singles and pairs, on June 9, and almost as many on June 13.

ROCK WREN, *Salpinctes obsoletus*.—Commonly met with on certain high, rocky ridges of the upper St. Joe, but never before have I noted this species within fifty miles of St. Maries. On June 4, last, I saw a pair on the outskirts of town in a brushy, cut-over timber tract. There was a small rock-cut in the road nearby but nothing like the outcrops of basalt or sliderock that usually attract this species. During the rest of June and early July they were noted on many occasions, usually single individuals but sometimes in pairs. On June 13, I saw one bobbing about in a lumber yard and later that same day a metallic *chwing! chwing!* was heard and there was one singing its rather pleasing song perched atop a piece of piling on the edge of the millpond!

GRINNELL'S WATER-THRUSH, *Seiurus noveboracensis notabilis*.—While I became familiar with the Northern Water-Thrush in New York State some twenty-odd years ago, my first and only meeting with *notabilis* previous to this year occurred on the Lochsa River, a tributary of the Clearwater, on June 9, 1925. The bird was singing and I have never forgotten that song. On the 17th of May, 1936, I heard those same wild, ringing notes in a thicket of cottonwoods near the mouth of the St. Maries River but did not catch a glimpse of the bird. On June 9, 13, and 20, and on July 2 and 11, I heard not just one, but from two to five or six of these singers, sometimes at widely separated localities but always in the cottonwood and willow swamps. The only access to these areas was by following the dikes and the birds were invariably well back in the flooded jungles. Finally, on August 1, after I had almost given up hope, I caught a glimpse of the singer and a little later that same day was afforded an excellent view as it teetered on a cottonwood limb within fifteen feet of me. Once more, on August 12, I heard one make a half-hearted attempt at singing and got an unsatisfactory glimpse as it flew into the dense swamp.—R. L. HAND, *St. Maries, Idaho*.

A colony of Western Grebes.—On August 6, 1936, at the southwest end of the Strawberry Reservoir, Logan, Utah, near where the river enters the lake, a colony comprising sixty nests of the Western Grebe, *Aechmophorus occidentalis*, was observed. The nests were located in water twenty-four inches deep, and from twenty to forty yards out from the lake shore, and were in the direct sunlight. They were constructed of sedges, *Carex* sp., which grew in great abundance along the lake shore. The number of eggs found in the nests varied from one to six. However, two, three and four were the most common, the average being three eggs to a nest. One egg from a nest of two was beginning to pip. The eggs in nearly all of the nests were completely covered with about three-fourths of an inch of semi-decayed sedge plants. Some of the nests contained both hatched shells and whole eggs. This might indicate that all of the eggs do not hatch at the same time, but that the hatching is spread over a period of a few days. I have been unable to find any information on this point. I visited the colony again on the afternoon of August 10. At this time I found that all but a few of the eggs had hatched. On this visit we found one egg hatching; this was the last or only egg in the nest. At no time were any little ones seen; nor were the females ever seen on the nests, though they were often in the locality.—LYNN GRINER, *Utah State Agricultural College, Logan, Utah*.

Albino Pied-billed Grebe in Wisconsin.—Mr. Leonard Lehr of Milwaukee

reported that on Lake Keesus, Wisconsin, a white "Hell-diver" had been observed off and on throughout the summer of 1936. On September 13, the writer collected the bird which was in company with another normally colored grebe. When examined in the laboratory, it proved to be a normal-sized male Pied-billed Grebe (*Podilymbus podiceps*). The entire plumage is pure white with no dark markings. When freshly killed, the feet and legs in general were apricot yellow. The eyelids, gape and bare parts ahead of the eye were buff yellow, and general color of bill forward was grayish lavender. The iris was neutral gray. The specimen is Milwaukee Public Museum catalogue No. 17,586.—WARREN DETTMANN, *Milwaukee Public Museum, Milwaukee, Wisc.*

Flamingo seen in Florida.—Between the 9th and 16th of August, 1936, Miss Bernice Shor, Associate Professor of Biology at Rollins College, observed a Flamingo (*Phoenicopterus ruber*). The bird was flying over Hobe Sound only a short distance from the observer. The combination of the bird's unusual color and structure makes the identification quite certain. The observation was made from the west shore of Jupiter Island in Martin County, Florida.—J. C. HOWELL, *Cornell University, Ithaca, N. Y.*

The Flamingo in the Florida Keys.—In view of the rarity of *Phoenicopterus ruber* in the United States, the following records are of interest. Though not the observations of accredited ornithologists, they are, in the opinion of the writer, perfectly reliable, for the men concerned know the Flamingo as well as, if not a good deal better than most ornithologists! These men, natives of the Florida Keys, are constantly in the field and while scientific names are closed books to them, they know birds and are not given to exaggeration.

The Audubon Association Warden, James Durden, on duty in the Upper Keys has supplied me with the following:—

May 1936—Two Flamingoes at Mud Bay seen by K. Irwin.

Sept. 20, 1936—One Flamingo seen at Snipe Point, near Deer Key by C. Sanders.

Oct. 14, 1936—One Flamingo seen in Mud Channel by C. Irwin and Leland Ross.

Sept. 30, 1936—One Flamingo seen near Captain Key by James Durden.

Oct. 2, 1936—One Flamingo seen at Crocodile Point by Irwin and Ross.

This last bird is probably the same individual seen by Durden on Sept. 30, as the vicinities involved are adjacent. All of the above records were made in the Upper Keys (Bay of Florida) between Card Sound and Tavernier. Durden came within seventy-five yards of his specimen and saw it feeding in the characteristic manner, with the head seemingly "upside down." It fanned its wings gently from time to time. It is well to note that these could hardly have been captive birds, certainly not any of the flock at Tropical Park, Hialeah, as these birds are pinioned. They are wild birds and constitute the latest records of United States occurrence.—ALEXANDER SPRUNT, JR., *Supervisor Southern Sanctuaries, Nat'l Assoc. Audubon Socs., Charleston, S. C.*

Behavior of a Blue-winged Teal.—A very interesting observation was made this summer, June 27, 1936, in Strawberry Valley, Utah. I approached a small stream which empties into the Strawberry Reservoir, and completely surprised a brood of six young Blue-winged Teal (*Querquedula discors*). The female was swimming some fifteen yards up stream from her brood. The young ducklings were the first to become aware of my presence. As soon as they saw me they began peeping, crying, and scurrying up stream, flapping their wings on the water as they went, and

making quite a commotion. The female, on hearing the cries of her young, quickly flapped down stream toward her brood. When she reached her first duckling, she pushed it under water with her wing, then went to the next one and likewise pushed it under water. After this procedure had been repeated on all of her brood, she started to fly away, when one of her young reappeared above the water, resuming its peeping cry. The female returned and again ducked the young one under water. Each time that one of the ducklings appeared in the open stream or made any sound, it would again be submerged under the water by its mother. This was repeated several times, until the ducklings took to cover in the sedges along the stream bank that offered excellent protection for them. Not until each one of her ducklings was safely hidden did the female fly away.—LYNN GRINER, *Utah State Agricultural College, Logan, Utah.*

Golden Eagle in Illinois.—In view of the scarcity of definite records of the Golden Eagle (*Aquila chrysaetos canadensis*) in Illinois, it may be well to record the capture of two specimens. Some time ago I saw a fine female which had just been sent in to a taxidermist's shop in Chicago from Lacon, Marshall County, Illinois. It was killed by a farmer on November 9, 1928, and was said to have disposed of two chickens daily for the six days previous to its death.

There is the skin of a young bird in this museum collected at Charleston, Coles County, Illinois, December 1, 1914, by T. L. Hankinson. Judging by size (wing 650 mm.), it, too, is a female.—PIERCE BRODKORB, *Museum of Zoology, University of Michigan, Ann Arbor, Mich.*

Duck Hawk and Sparrow Hawk on the Tortugas.—In view of the comparative scarcity of arrival dates in the fall migration of the Duck Hawk (*Falco peregrinus anatum*) and the Eastern Sparrow Hawk (*Falco s. sparverius*) in far-southern Florida, it seems well to record early dates made by the writer on Garden Key, Dry Tortugas, on October 2, 1936. A landing was made at Fort Jefferson on this day from a Coast Guard amphibian plane and several hours were spent on Garden Key. Among the few birds seen there, was a magnificent adult Duck Hawk and a pair of Sparrow Hawks. Howell, in his 'Birds of Florida,' states on page 188, on the authority of Atkins, that the former arrives "at Key West in winter . . . about Oct. 1st." Garden Key lies directly west of Key West, distant about 65 miles in the open Gulf. The bird was seen several times during my stay, and circled over the quadrangle of the fort at an elevation of hardly more than twenty feet over the parapet. The black mustache mark and the barring of the underparts were plainly visible without glasses. This record then, is one day later than the earliest hitherto.

On page 192, Howell gives the same authority for the arrival of *Falco s. sparverius*, "the earliest migrant being noted September 30, 1888." Forty-eight years have passed since Atkins made that observation, and the writer saw a pair at Garden Key on October 2, 1936, two days later than the earliest hitherto. These birds are referred to *sparverius* provisionally, since *paulus* does not seem to occur on the Lower Keys. None was taken at Garden Key of course, but it would seem proper to assume that this pair, for it was a pair, were representatives of the Eastern Sparrow Hawk.—ALEXANDER SPRUNT, JR., *Supervisor, Southern Sanctuaries, Charleston, S. C.*

Black Rail breeding in Indiana.—On June 7, 1936, a pair of Black Rails (*Crex c. jamaicensis stoddardi*) was found near Windfall, Tipton County, Indiana. This is the third locality in the State from which they have been reported. The two other instances are: on April 22, 1888, Ruthven Deane found this bird at English Lake; on July 27, 1894, Jesse Earle and Alexander Black found one young and one

adult male near Greencastle (Butler, 'Birds of Indiana'). In the present case, the Black Rails were found in an alfalfa field with a marshy edge on a drainage ditch. The birds were working their way along rows of cut alfalfa when two young boys discovered them and tried to flush them. The birds would not fly but ran to cover in the hay. The boys succeeded in capturing them and put them in a canary-bird's cage for the night. The male escaped and next morning an egg was found in the cage. The boys had thought these were immature birds but finding the egg so aroused their interest that they came to Kokomo for help in identification and were sent to me. The female died on June 10, 1936. The egg was 1.011 x 0.756 inches, nearly oval, creamy white, very smooth and glossy; the shell was sprinkled with irregular small reddish-brown spots, larger and more numerous at the larger end of the egg. Comparatively few of the spots could be called dots. This female Black Rail was mounted and the specimen with one egg is to be given to the Field Museum of Natural History.—(Mrs.) ALTA R. COX, 316 N. Union Street, Kokomo, Indiana.

Franklin's Gull in Ontario.—On August 31, 1936, Mr. C. Molony and the writer visited Wasaga Beach, Simcoe County, Ontario, on Georgian Bay. Driving along the beach, we were attracted by a small gull which was in company with several Ring-billed Gulls. This bird was quite striking when contrasted with its larger companions and appeared to be in winter plumage, being dusky about the eyes, ears and back of head. When collected it proved to be a Franklin's Gull (*Larus pipizcan*). The writer is indebted to Mr. L. L. Snyder and Mr. J. L. Baillie of the Royal Ontario Museum of Zoology, who confirmed the identification of the specimen as that of a female in the last stage intermediate condition of plumage between the first-nuptial and the second-winter plumage. The specimen is now in the museum's collection. There appear to be only three published records of Ontario specimens: Thomas McIlwraith records two individuals taken at Hamilton, one by John Dynes in Oct. 1865, and the other by McIlwraith in the following April ('Birds of Ontario,' p. 39, 1886). These specimens are not now known to be extant, and are not in the McIlwraith Collection of mounted birds in Hamilton. The only other record is of one shot at Toronto by C. K. Rogers, June 1, 1898, and now in the collection of J. H. Fleming (Auk, vol. 47, pp. 65-66, 1930).—O. E. DEVITT, Toronto, Ontario.

Sabine's Gull on Long Island.—On October 17, 1936, the wind blew with almost hurricane force directly from the sea upon the south shore of Long Island, New York. At Mecox Bay, near Watermill, large numbers of Herring, Ring-billed, and Laughing Gulls took refuge on the sand-flats. Among them, hovering over the intruding surf, was a single Sabine's Gull (*Xema sabini*), and this bird remained on the bay until the evening of the next day, when it flew out to sea with some Laughing Gulls. It was not seen on the nineteenth, but it returned from sea, again with Laughing Gulls, on the morning of the twentieth, and alit on the flats. Several attempts were then made to collect it, but it was impossible to stalk the gulls to within shotgun range, as there was absolutely no cover, and as soon as a few gulls rose into the air, all the others would follow. I was able, however, to approach close enough to pick out the Sabine's Gull even while the birds were at rest, most easily because of the different shape and smaller size of its head and bill, as well as by the yellow color of the terminal portion of its otherwise dark bill. This feature I had not observed on the first day of the bird's appearance. In flight, identification was a simple matter even at long range, and among hundreds of other swirling gulls. The unique and conspicuous wing-pattern marked it from afar. The pattern is not easy to describe concisely, but the general effect was of two differently colored,

contiguous triangles upon the upper surface of each wing. The distal triangle included the outer primaries, the tip of the wing, and the outer portion of the posterior border of the wing, and was black. The proximal triangle included the inner primaries, a few of the outer secondaries, the inner portion of the posterior border of the first joint of the wing, and was white. The rest of the wing, except for a narrow, white, posterior margin, was blue-gray in color, as was the mantle, of a shade slightly paler, but approximating that of the Laughing Gull. Traces of the black hood persisted upon the nape and occiput. The forked tail was readily seen, but was not a striking field-mark. The general "habitus" of the bird was not that of a Laughing Gull, its flight was more buoyant, the "tail-end" of the body rather attenuated—but these are rather intangible characters!—WILLIAM TOD HELMUTH, 3D, 667 Madison Ave., New York City.

Arctic Three-toed Woodpecker on Long Island.—On October 13, 1936, an Arctic Three-toed Woodpecker (*Picoides arcticus*), was seen at Easthampton, Long Island, New York. The bird was feeding in a stand of old pitch pines, and called attention to itself by a ringing, metallic, monosyllabic call. It was restless, but not shy, and was finally collected after a brief period of observation. The specimen was turned over to Dr. Ernst Mayr, of the American Museum of Natural History. The bird was a male.—WILLIAM TOD HELMUTH, 3D, 667 Madison Ave., New York City.

New Records for Spanish Honduras.—When taking the long and monotonous railroad trip from La Ceiba to Puerto Castilla on March 15, 1936, I encountered two Gray Kingbirds (*Tyrannus dominicensis*), and a small flock of Cedar Waxwings (*Bombycilla cedrorum*), with ample opportunity for identification. Unfortunately I had neither the permission nor the opportunity to collect specimens. Neither species has previously been recorded from Honduras according to Stone (see Proc. Acad. Nat. Sci. Philadelphia, vol. 84, pp. 291-415, 1932).—JAMES BOND, Acad. Nat. Sciences, Philadelphia, Pa.

Willow Thrush in the Magdalen Islands.—A breeding male of *Hylocichla fuscescens*, taken by me on Grindstone Island (Magdalen Islands) on June 26, 1936, proves to belong to the western and Newfoundland race, *salicicola*, and is in no sense intermediate between this well-marked form and the Veery (*H. f. fuscescens*). It would seem likely that the individuals of this species found in summer on Anticosti Island are likewise referable to this race.—JAMES BOND, Acad. Nat. Sciences, Philadelphia, Pa.

Early nesting of the Cape Sable Seaside Sparrow.—On March 30, 1934, near Flamingo in Monroe County, Florida, Messrs. J. Adger Smyth, D. S. Riggs, and the writer observed a young Cape Sable Seaside Sparrow (*Ammospiza mirabilis*). The bird had not been out of the nest more than a day or two. The set of eggs from which this youngster hatched must have been deposited during the first week in March.—J. C. HOWELL, Cornell University, Ithaca, N. Y.

Lincoln's Sparrow nesting in Maine.—On June 14, 1936, Mr. Walter Clayton, of Lincoln, discovered a nest of the Lincoln's Sparrow (*Melospiza l. lincolni*) in "Keen's Bog" near Chester, Maine (Penobscot Co.). The nest, which Mr. Clayton kindly showed me, was imbedded in the sphagnum moss, near the middle and in an open part of the bog, and contained four eggs, apparently about to hatch. The female was very shy but the characteristic breast markings were noted, serving to identify

her positively. This is apparently the first nesting record of the Lincoln's Sparrow for New England.—JAMES BOND, *Acad. Nat. Sciences, Philadelphia, Pa.*

Measurement of Growth in the Eastern Chipping Sparrow.—While engaged in banding and marking Chipping Sparrows (*Spizella passerina passerina*) for study on the campus of Cornell University, I endeavored to make accurate measurements of each individual handled. In some cases measurements were taken continuously from the first day of hatching through to the sixteenth day of age. In order to do this the young had to be placed in a feeding cage so that the adults could continue to feed the captive bird in as nearly a normal fashion as possible. The following table shows the measurements in millimeters taken of one young bird for sixteen days:

TABLE I

Age in days	Weight in grams	Length	Extent	Wing	Primary	Tail	Culmen
¼	1.6	33	31	6	0	0	4
1	2.85	39	31	8	0	0	5
2	4.4	44	40	10	1	0	5
3	5.3	48	55	13	3	0	6
4	7.5	54	75	20	7	2	6
5	9.2	56	90	24	12	3	6.5
6	10.0	65	110	31	20	5	7
7	10.8	65	138	35	22	7	7
8	9.8*	72	138	37	27	10	7.5
9	10.5	75	137	42	32	13	7.5
10	10.4	76	149	45	32	14	7.5
11	10.4	78	150	45	35	16	8
12	—	83	154	47	35	20	8
13	11.8	85	157	50	40	22	8
14	11.5	95	175	53	45	27	8
15	11.5	97	177	56	46	30	8
16	10.7	102	200	60	46	38	9

* This decrease noted in the eighth day was at the period when the bird was about ready to fly and also at the time that it was placed in the cage.

The following table shows the results of one hundred and fifty-seven measurements in millimeters taken between the dates of June 15 and August 15, 1936:

TABLE II

Age in days	Weight in grams	Length	Extent	Wing	Prim.	Leg	Tail	Culmen	Specimens measured
1—	1.6	31.2	28.6	7	0	10.6	0	3.5	5
1	2.1	37.5	33	7	0	13	0	5	1
2	3.06	38.4	35	7.8	0	14	0	4.8	6
3	4.67	43.7	44	8.8	1.4	17	.5	4.8	7
4	5.4	47	59	14	3	20.8	.5	5.4	5
5	7.9	53.3	76	20	7.1	25	1.	5.7	8
6	8.7	56	99	25.6	14	27	3.8	6.3	5
7	9	62	112	30.2	18	29	4.8	6.3	7
8	10.07	66.3	134	37.3	23.4	30	9.9	7.0	16
9	10.1	72.3	134	39.9	27	30.3	11.4	7.1	21
10	11.05	74.4	154	43.8	30.7	31	14	7.3	15
11	—	77	157	48	30	30	18	7.4	8
12	—	82	160	49	36	30.9	20.7	7.5	7
13	11.8	83.5	163	48	36	31.5	20	7.5	3
14	11.5	95	175	53	45	31	27	8	1
15	11.5	96	177	57	38	29	38	8	6
16	—	97	177	57	38	29	38	8	3
18	—	100	—	65	42	31	32	7	1
20	—	115	197	65	45	32	38	9	2
21	—	105	—	63	49	—	40	8.7	2
22	—	109	196	63.5	49	—	42	8.7	2

Table III shows the average of measurements in millimeters of adults handled during this same period.

TABLE III

Sex	Weight grams	Length	Extent	Wing	Prim.	Leg	Tail	Culmen	Specimens measured
Females	12.7	127	205	64	52.5	31.8	56	9.6	17
Males	12.9	129	209	68	53.5	31.9	59	9.8	11

—RICHARD WEAVER, *Laboratory of Ornithology, Cornell University, Ithaca, N. Y.*

RECENT LITERATURE.

Mayaud's 'Catalogue of the Birds of France.'—This well-prepared check-list¹ of the birds of France has been published by the Société d'Études Ornithologiques and the author has had the coöperation of Henri Heim de Balsac and Henri Jouard. The classification of families proposed by Wetmore is adopted while Dwight's 'Gulls of the World' is followed in the arrangement of the gulls and Lowe's studies of the Charadriiformes in that of the waders. The plan follows that of the third edition of the A. O. U. Check-list in which there is a separate paragraph for the binomial name with the trinomial forms below. This of course involves such species as *Tetrastes bonasia* with its French subspecies *T. b. rupestris*, since the typical *bonasia* does not occur within the range of the work. The inclusion of the binomial in a distinct paragraph led to much confusion as many readers thought that two different races were intended and the A. O. U. Committee adopted a plan of listing only the actual forms occurring in North America in the fourth edition of its list, a plan which was also followed by Peters. There have been many advocates, however, of the other scheme which is adopted by Mayaud. Full references to genera, species and subspecies are given and a statement on character of occurrence and distribution in France.

We find several instances of recognition of intermediate forms on the same basis as subspecies, a rather novel innovation in a check-list.

M. Mayaud and his associates deserve the thanks of all ornithologists for the preparation of such a satisfactory and up to date list.—W. S.

Fuertes and Osgood's 'Artist and Naturalist in Ethiopia.'—The series of color plates of African birds and mammals published several years ago by Field Museum and representing the last work of the talented Fuertes now appears in illustration of the journal² of the two naturalists who undertook the expedition to Ethiopia upon which the paintings were made.

Dr. Osgood explains how Fuertes' untimely death prevented the preparation of the account of the expedition which they had planned and the fact that neither of their diaries tells the whole story. "Fuertes," he truly says, "was an artist, sensitive, ardent, impetuous and, despite his fifty years, full of almost boyish enthusiasm; on the other hand I find myself offering some contrast, for although I would not admit immunity to beauty of form and color, it seems I am seldom able to 'let go' until the hard cold facts have precedence." The result is that we have before us under the initials "F" and "O" the verbatim extracts from each journal for each day. Nothing could be more satisfactory since the unedited first-hand impressions of a traveller are always more interesting and impressive than a later more conventional account. The difference in the attitude of the writers as explained by Dr. Osgood lends itself to this method of treatment, each journal supplementing the other without loss of personality.

As a memorial to Fuertes, which was one of the objects of publication, the book is fully adequate. While many will find it an interesting account of a country which has been much in the public eye of late, Louis Fuertes' friends will find in it all of the

¹ Inventaire des Oiseaux de France, par Noel Mayaud avec la collaboration d'Henri Heim de Balsac et Henri Jouard. Société d'Études Ornithologiques. viii + 211 pp. André Blot, 12 avenue de la Grande-Armée, Paris.

² Artist and Naturalist in Ethiopia. By Louis Agassiz Fuertes and Wilfred Hudson Osgood. Illustrations painted from life by Louis Agassiz Fuertes and reproduced in this volume by special permission of Field Museum of Natural History. Doubleday, Doran & Company, Inc., Garden City, New York, 1936, viii + 249 pp., pls. 1-16. Price \$5.00.

enthusiasm, the joy of life and the sense of humor that characterized the artist-naturalist who was so dear to us all.

The details of camp life, the descriptions of the varied regions that the expedition visited and the constant allusions to their wild life, teeming with bits of life history, make the book a real contribution to natural history as well as a fascinating journal.—W. S.

Thomson's 'Bird Migration.'—Ten years ago we had the privilege of reviewing Dr. Thomson's classic 'Problems of Bird Migration' and since then he has published a review in 'The Ibis' of the literature of the subject up to 1935. Now we have a "short account of bird migration in simple terms" which forms one of the series of Bird-Lovers' Manuals published by Witherby and Company.

The author makes no claim for new or original theories or facts in the present volume although he has included many excerpts from the literature of the past ten years to bring the treatment up to date. The book is, in many ways, comparable to Wetmore's 'The Migration of Birds' (1930) and Rowan's 'The Riddle of Migration' (1931) in that it attempts to present the facts and theories dealing with this complex problem in a form that the general reader may grasp. The author has succeeded admirably in his task and the subject matter is not only well chosen but set forth clearly so that it makes interesting reading presented in logical sequence. It has the advantage over other similar works in that it includes the most recent investigations, an advantage always possessed by him who has the last word on any subject.—W. S.

Nicholson and Koch on 'Songs of Wild Birds.'—This little book² packed in a box with two "gramophone" records does for British birds what Mr. A. R. Brand did for North American birds over two years ago (see Auk, vol. 51, p. 408, 1934) and yet, strange to say, we are unable to find a single mention of Mr. Brand's work in the present book. So far as we can see the methods employed and the taking of a sound truck out into the woods and fields are essentially those employed by Mr. Brand and explained in 'The Auk' in 1932 and in 'Natural History' in July, 1933.

Mr. Koch is "head of the cultural department of a large gramophone factory in Germany" and his results in recording bird song have been made possible by the co-operation of the Parlophone Company of England. His records are necessarily better than those furnished with Mr. Brand's little book since they are standard records both in size and in materials instead of the small, lighter weight, pasteboard discs which were made to fit into the cover of a book, and the reproductions are wonderfully clear in both quality and detail, especially those of the Nightingale, Blackbird, Cuckoo, etc. He is responsible for the account of the methods employed.

Mr. Nicholson has furnished most of the text of the book which discusses bird song in a popular way under the headings—What is bird song? and Why do birds sing? following which is a detailed account of the songs of the birds of Great Britain. There are seven color plates from paintings by Roland Green and a like number of half-tones from photographs illustrating the birds whose songs are presented on the records. Professor Julian Huxley contributes an introduction.

This welcome contribution to the subject of bird song will enable American bird students to hear the songs of many of the birds made famous in English literature without going abroad to seek them firsthand.—W. S.

¹ Bird Migration, a short Account. By A. Landsborough Thomson, C.B., D.Sc. London, H. F. and G. Witherby, Ltd., 326 High Holborn, W. C. 1., 1-224 pp., 7 plates from photographs and ten maps and diagrams, 1936. Price 5 shillings net.

² Songs of Wild Birds. By E. M. Nicholson and Ludwig Koch. Introduction by Julian S. Huxley. With gramophone records. London, H. F. & G. Witherby, 326 High Holborn, W. C. 1. xxi + 216 pp., 1936. Price 15 shillings net.

Brand's 'More Bird Songs.'—The reception accorded the first series of bird songs on phonograph records has encouraged the author to bring out a second,¹ which, with the suggested possibility of a third in the future, will place in available form the sound reproductions of the commoner birds of the eastern United States. Three double-backed phonograph disks accompany the book in an envelope within the back cover, ready for use with the ordinary phonograph equipment. The songs are so arranged on the disks as to bring out in succession those that are somewhat similar or are to be heard in a similar habitat. All are reproduced from the sounds given by birds in a wild state, for as the author justly remarks, captivity results in many changes of both voice and function. The main body of the text supplements the records, in giving for each species in the order in which it is heard, the range, field marks, dates of song, haunts, and a brief description of the utterance. A series of pen and ink sketches by Dr. George Miksch Sutton illustrates each species. An introductory chapter on the significance of bird song presents the current viewpoint on the subject. In comparison with the actual sounds, the inadequacy of our published descriptions of bird song becomes woefully apparent.

This unique aid to the identification as well as to the enjoyment of bird songs should have a wide appeal to beginners in the field study of birds as well as to teachers of field classes. We may eventually hope for the application of sound recording to a graphic method of the analysis of song.—G. M. A.

Weiss on Rafinesque.—Still another book² has just appeared concerning Constantine Samuel Rafinesque (1783–1840), an American naturalist it will be remembered, of the early part of the last century whose vast learning and marked peculiarities made his career particularly vivid and colorful. The present edition—a beautiful work—has been limited to 150 copies, illustrated by twenty-five previously unpublished pencil sketches made by Rafinesque of relatives, friends, and associates while he was professor in old Transylvania University at Lexington, Kentucky. It is set up in 12-point Caslon old-face type and is printed on ivory dull-coated paper, and is attractively full bound in blue cloth. A friend and contemporary of Thomas Jefferson, John James Audubon, Alexander Wilson, and other natural-history students of that period, there probably never lived a more enthusiastic pioneer than was Rafinesque in the various branches of botany, in ornithology, in zoology, in travel, in exploration, and in archaeological work. Also because of his activities as editor and literary worker he will long be remembered. It is fitting and well to have the attention of present-day bird lovers and other natural-history students again directed to his career.—J. S. WADE.

PERIODICAL LITERATURE

BAILLIE, J. L., AND HARRINGTON, P. The distribution of breeding birds in Ontario. Part. I. Trans. Royal Canadian Inst., **21**: 1–50, map, 1936.—This is “an initial attempt to outline the breeding ranges of birds in Ontario,” a province stretching from the Great Lakes to Hudson Bay. The breeding birds of this area number 210 species, of which 81 are here listed, with for each a brief statement of its nesting range and specific instances for the several counties. The literature, collections public and private, and much unpublished data have been drawn upon in the preparation.

¹ Brand, Albert R. *More Songs of Wild Birds*. 8vo, New York, Thomas Nelson and Sons, 116 pp., three phonograph disks, 1936. Price \$2.50.

² Rafinesque's *Kentucky Friends*. By Dr. Harry B. Weiss. 8vo, cloth, 72 pp., 25 illus. 16 North 7th Avenue, Highland Park, New Brunswick, N. J., published by author, 1936. Price \$7.50.

- BATES, GEORGE L. Birds of Jidda and central Arabia collected in 1934 and early in 1935, chiefly by Mr. Philby.—Part II. With notes by H. St. J. B. Philby. *Ibis*, (13) 6: 674-712, pl. 12, Oct. 1936.—An annotated list of birds taken. Nine races of the Yellow Wagtail (*Motacilla flava*) were identified in spring and autumn. Three species of sunbirds occur, two of *Cinnyris*, one of *Nectarinia*; the former have but a single moult, the latter has two moults a year. A Black Redstart (*Phoenicurus ochruros*) shot at Jidda, March 18, is the only certain record for Arabia. A Wheatear (*Oenanthe lugens persica*) has a curious habit of hiding under rocks. The Whinchat is first recorded for Arabia.
- BATES, G. L. A bird-spider nesting association. *Ibis*, (13) 6: 817-818, Oct. 1936.—A West African flycatcher, *Alseonax epulatus*, was found in the southern Cameroons, nesting in "a great mass of dry leaves and trash that had collected on one of the strong and extensive spiders' webs found in the forest." The web was inhabited by a colony of spiders. This is a usual habit with this bird.
- BELCHER, SIR CHARLES, AND SMOOKER, G. D. Birds of the colony of Trinidad and Tobago.—Part IV. *Ibis*, (13) 6: 792-813, Oct. 1936.—Covers the trogons, kingfishers, motmots, puff-birds, toucans, woodpeckers, wood-hewers, spine-tails, ant-birds and cotingas with brief notes on their occurrence and habits.
- BLACK, CYRUS A. Records of the Whooping Crane for the spring of 1936. *Nebraska Bird Review*, 4: 81, Oct. 1936.—On March 31, a lone bird was seen near Overton, Nebraska; on April 11, a flock estimated at about one hundred was seen feeding in a field west of Elm Creek, Buffalo County, and on the following day, what may have been the same flock, estimated at about forty birds, was seen at Kearney, in the same county.
- BLAIR, H. M. S. The birds of East Finmark.—Part III. *Ibis*, (13) 6: 651-674, Oct. 1936.—Conclusion of a list of birds of the Varanger Peninsula. Fulmars winter in unusual numbers on the coasts, departing in early May for the north; a White-billed Loon seen in late May. Notes on courtship display of the Ruff; when charging each other, males were seen to close in only during the first few days of this period. Preponderance of males over females believed to imply promiscuity in mating rather than polygamy. Two Curlew Sandpipers, June 2, 1927, constitute the first and only spring record for Norway. Purple Sandpipers occur the year round on the peninsula. Willow Ptarmigan were found in small numbers after the epidemic of coccidiosis in 1923, which followed by scarcity of suitable food berries, made recovery very slow.
- DANFORTH, STUART T. The Birds of St. Kitts and Nevis. *Tropical Agriculture* (published in Trinidad), 13, no. 8.—An annotated list of sixty-three species with two additions on a type-written sheet,—*Querquedula discors* and *Dolichonyx oryzivorus*.—W. S.
- DELACOUR, J. Le faisan scintillant, *Graphiphasianus scintillans* (Gould). *L'Oiseau et Rev. Franç. Ornith.*, (2) 6: 565-566, col. pl., 1936.—A colored plate by Kobayashi illustrates one of the most beautiful of Japanese birds, of which two forms occur, one in northern and one in southern Hondo and Shikoku. Intermediate specimens are referred to as either hybrids or intergrades.
- DELACOUR, J. Une curieuse habitude de la Grue du Mexique. *L'Oiseau et Rev. Franç. Ornith.*, (2) 6: 693, 1936.—Sandhill Cranes (*Grus canadensis tabida*) in captivity in France, were found to dust their plumage regularly by taking up in their bills mixed pebbles and yellow clay and spreading it among their feathers until they were much discolored. They did not bathe.
- GILBERT, P. A. Field notes on *Rallus pectoralis*. *The Emu*, 36: 72-73, pl. 11, Oct.

- 1, 1936.—The Lewin Water-rail of eastern New South Wales is chiefly nocturnal. Nests with eggs are found from late September till early January.
- GLANDON, EARL W. The Rufous Hummingbird at Stapleton, Logan County [Nebr.]. Nebraska Bird Review, 4: 83, Oct. 1936.—Second sight record for the State.
- GLEGG, W. E. Additional notes on the birds of Corsica. Ibis, (13) 6: 814-817, Oct. 1936.—Brief records of occurrence of less common species.
- HYEM, E. L. Notes on the birds of Mernot, Barrington, N. S. W. The Emu, 36: 109-127, pl. 17-19, Oct. 1, 1936.—Many interesting notes on the local birds. Wedge-tailed Eagles here "appear to feed chiefly on rabbits."
- JOURDAIN, F. C. R. The birds of southern Spain.—Part I. Passeres (pt.). Ibis, (13) 6: 725-763, Oct. 1936.—The first part of an annotated list of birds known from southern Spain. A resumé of literature accompanies a bibliography, and there are remarks on the topography and vegetation as affecting bird distribution. Brief annotations are given with the species listed. Starlings are shot in vast numbers for food, as many as 264,000 having been sold from one estate in Cadiz (period not mentioned).
- JOURDAIN, F. C. R. The forms of the Brent Goose, *Branta bernicla* L. Ibis, (13) 6: 829-831, Oct. 1936.—There are three well-marked forms: *Branta b. nigricans* of western North America; *B. b. hrota* occurring east of the latter's range to Spitsbergen and Franz Josef Land; and *B. b. bernicla* the typical form, from Kolguev eastward. Since Trevor-Battye's record of a pale-breasted bird from Kolguev, all subsequent specimens prove to be the dark-breasted typical form.
- LACK, DAVID. On the pugnacity at the nest of a pair of *Onychognathus walleri walleri*. Ibis, (13) 6: 821-825, Oct. 1936.—These starlings repeatedly chased away another pair of a different genus, *Stilbospar*, from the neighborhood of their nest-hole while the second pair was trying to build in a hole four feet below. The latter did not retaliate, but eventually when tolerance was established, finished building. The first pair was aggressive because of proximity rather than because of competition for nest-holes. Three feet below the second hole was a third occupied by a pair of White-eared Barbets; on four occasions it was seen to be visited by two species of Honey-guides, which parasitize barbets, but they were driven off by the owners.
- LEGENDRE, MARCEL. Les variations de plumage et de forme chez les oiseaux. III.—Polymorphisme et dimorphisme. L'Oiseau et Rev. Franç. Ornith., (2) 6: 567-575, 1936.—Discusses dichromatism in birds of prey; inversion of nesting habits with brighter colors in the female of hemipodes, painted snipe, and tinamous. Details are given of the results of various matings of red-headed and black-headed dimorphic forms of the Lady Gould Finch. Either form will breed true if similar males and females are mated. If a red-headed male be bred to a black-headed female of pure strain, the progeny are males of each type in equal proportions and homozygous, while all the females are heterozygous. If one of the males be bred to the heterozygous female of either cross, the resulting females as well as the males are homozygous.
- LOCKLEY, R. M. On the breeding birds of the Westmann Islands. Ibis, (13) 6: 712-718, pl. 13, Oct. 1936.—These rugged islands, twelve miles southwest of Iceland, were visited in mid-June 1935. Twenty-seven species of birds were found. Leach's Petrel breeds here, as well as both Northern and Brünnich's Murres, 70 to 80 per cent of the former being of the "ring-eyed" type. In July and August, thousands of young Puffins, Fulmars, and Gannets are netted for winter food and for export to Iceland. Most of the breeding Fulmars are light-colored birds; 10

- to 15 per cent of nests noted contained two eggs each, "significant in view of the great increase and spread of the Fulmar."
- LORD, E. A. R. Notes on the Dusky Moorhen. *The Emu*, **36**: 128-129, Oct. 1, 1936.—This moorhen, *Gallinula tenebrosa*, is found to construct two types of structures: one, the nest for the reception of the eggs, the other as a place for "play" or for resting. Much time is spent by the birds on the latter structure in preening their feathers and "mating often occurs there." The play platform is very similar to the nest, but its situation is quite different, being usually placed on weeds or mud in shallow water or on stones in a stream, but always in an exposed position, while the nest is usually on a branch stretching out over deep water. Details are given concerning the eggs, time of hatching, and the appearance of the young.
- MACLATCHY, A. R. Contribution à l'étude des oiseaux du Gabon méridional (régions du Fernan-Vaz et de la N'Gounié). *L'Oiseau et Rev. Franç. Ornith.*, (2) **6**: 576-593, 1936.—Distributional and other notes on the pigeons, limicolines, jacanas, finfoots, fowl, and ducks of this region.
- MANUEL, CANUTO G. Life history and economic importance of Cabanis's Weaver. *Philippine Journ. Sci.*, **58**: 193-210, 1 pl., 1 table, Oct. 1935.—While the study of this bird reported upon embraces distribution and nidification, it deals chiefly with food habits of the species particularly in relation to rice, of which it is popularly regarded as a pest. The nestlings are fed entirely upon weed seeds. The stomachs of 800 adult birds from ten provinces were examined and the food determined to consist of 96.01 per cent weed seeds and 3.91 per cent rice. Thus the species subsists principally upon weed seeds but when rice is in the head it feeds freely upon the grain and should be driven from the fields.—W. L. M.
- MATHEWS, G. M. The patagial bone in certain Tubinares. *Ibis*, (13) **6**: 831-832, Oct. 1936.—In the albatrosses (Diomedidae) and the petrels of the subfamilies Bulweriinae and Procellariinae, there is a distinct bone at the elbow, here named the moklosteeon, which when the wing is extended gives added strength by affording attachment to muscle fibres from the humeral process and from the patagial muscle, thus forming a bar which stiffens the wing at the point of greatest stress.
- MATHEWS, GREGORY M. Remarks on Procellarian and Puffinine Petrels. *The Emu*, **36**: 91-98, Oct. 1, 1936.—*Ardenna* and *Calonectris*, placed as subgenera of *Puffinus* in the A. O. U. Check-list, are regarded as genera, nearly related in bill structure to *Procellaria*. A new grouping is suggested with keys for the "super-genus" *Puffinus*, and the black puffinoid petrels. *Procellaria fregata* Linn. is ruled indeterminate. The correct name of the South Atlantic White-fringed Storm Petrel is said to be *Fregettornis grallaria aquerea* (Kuhl).
- MCATEE, W. L., AND PIPER, S. E. Excluding birds from reservoirs and fishponds. U. S. Dept. Agric., leaflet no. 120, pp. 1-6, Sept. 1936.—For the protection of fish-hatchery ponds against fish-eating birds, or to prevent pollution of reservoirs from the droppings of birds, a network of criss-crossed, widely spaced wires even as much as forty feet apart has been found effective against gulls. Water-fowl may be further guarded against by wire fencing. Richard H. Pough writes: The issuance of this leaflet is significant of the increasing seriousness of the fish-eating and water-bird problem on artificial water areas. Long ignored by ornithologists and met by the Biological Survey through the free issuance of permits to kill protected species, this problem calls for serious attention and solutions that will not involve wholesale killing of some of our most interesting species. It is toward such solutions that Messrs. McAttee and Piper point in their leaflet. Devices that have proven practical under actual conditions of use are described in

detail. In view of the oft-repeated assertion of those who demand to be allowed to kill the birds, that any device to exclude them is prohibitively expensive or entirely impractical, it is encouraging to learn that ponds up to 600 by 1000 feet have been successfully wired at reasonable cost.

MCGILP, J. NEIL. Wedge-tailed Eagles. *The Emu*, **36**: 99-102, Oct. 1, 1936.—“From the available evidence,” this species is regarded as more harmful than beneficial in sheep-raising areas, on account of its habit of killing young lambs. The birds invariably work in pairs, and by flying low over a flock of sheep with lambs, cause some of the latter to bolt from the flock. The mother of the lamb thus singled out, is halted by one of the birds’ landing between her and her young. The birds then rush toward the lamb, driving it and striking it about the head, neck and shoulders, until it is killed. Kangaroos and wallabies are destroyed by diving at them, repeatedly slashing them. Many rabbits and much carrion are destroyed by these eagles as well.

OLIVER, W. R. B. The Paradise Duck. *The Emu*, **36**: 69-72, pl. 10, Oct. 1, 1936.—A brief account of this New Zealand duck, *Casarca variegata*, first discovered by the naturalists on Captain James Cook’s second voyage in 1773. Although now greatly reduced in numbers, it is said to be holding its own in remoter parts of southern New Zealand.

RAND, A. L. Results of the Archbold expeditions. No. 12. Altitudinal variation in New Guinea birds. *Amer. Mus. Novitates*, no. 890, 14 pp., Oct. 31, 1936.—The mountainous central area of New Guinea includes high ranges, with peaks reaching 5000 meters in altitude. Of sixty species of birds studied, 19 or nearly a third have representative subspecies in lowland and in highland, respectively. In over a quarter of these cases (17 in 60), there is increase of size with altitude, and in a single case the reverse is true. In four species cited, the highland race is the darker, and in two cases it is the lighter. Although the author draws attention to “the heretofore overlooked fact that altitudinal variation commonly occurs in New Guinea,” the same thing has been shown to be true of mammals.

SERVENTY, D. L. Feeding methods of *Podargus*, with remarks on the possible causes of its aberrant habits. *The Emu*, **36**: 74-90, pls. 12, 13, Oct. 1, 1936.—Because of the huge size of their wide beaks, the four species of Australian frogmouths stand out from other nighthawk-like birds. The generally accepted belief that these beaks are adapted for capturing insects flying in the air is not sustained by a study of stomach contents, most of which prove to be ground-frequenting species. Centipedes and scorpions form the most prominent articles of diet, with a mixture of ground beetles, spiders, crickets, and even an occasional sparrow or mouse. These they secure by flying down to the ground from the vantage point of a low perch such as a fence post, thus resembling in feeding habits the American *Nyctibius*.

STONER, C. R. Casting up of gizzard lining by hornbills. *Ibis*, (13) **6**: 820, Oct. 1936.—Ever since Bartlett in 1869 observed an Undulated Hornbill (*Rhyticeros undulatus*) in the London Zoological Gardens throw up the lining of its gizzard, it was assumed that this was a remarkable device of the male for feeding the sitting female. Although the periodic casting of this lining is known to take place in certain birds, it has been observed in the hornbills in only this genus.

SWENK, MYRON H. Bird mortality in the 1936 Nebraska grasshopper poisoning campaign. *Nebraska Bird Review*, **4**: 98-99, Oct. 1936.—Reports indicate very slight if not negligible mortality among birds, in spite of the fact that about 2450 tons of dry bran mixed with sodium arsenite was used by over 30,000 farmers in the State.

- TICEHURST, CLAUD B. What is *Pratincola robusta* Tristram? *Ibis*, (13) 6: 820-821, Oct. 1936.—To be rejected as an indeterminable name in favor of *orientalis* for the Zululand bird.
- TRINE, MRS. GEORGE W. Hand-raising young Black-headed Grosbeaks. *Nebraska Bird Review*, 4: 79-80, Oct. 1936.—Two deserted nestlings reared on hard-boiled egg, then bread soaked in milk, later insects, especially grasshoppers, of which the pair in a day consumed 150.
- WETMORE, ALEXANDER. A new race of Song Sparrow from the Appalachian region. *Smithsonian Misc. Collns.*, 95, no. 17, September 26, 1936.—*Melospiza melodia euphonia*, Pocahontas Co., West Va. This seems to be identical with the bird of the Mississippi Valley known as *M. m. beata* in the A. O. U. Check-list. The type of *beata* proves to be a specimen of *M. m. juddi* of North Dakota so that the name is not available for the Mississippi Valley bird. Dr. Wetmore is not certain that the new form and that of the low grounds will eventually prove identical but he can find no definite characters upon which to separate them at present.—W. S.
- WHISTLER, HUGH. On seven recently described birds from the Punjab. *Ibis*, (13) 6: 718-724, Oct. 1936.—Six of seven forms lately described by Messrs. Van Tyne and Koelz are regarded as invalid.
- WILLIAMS, ARTHUR B. The composition and dynamics of a beech-maple climax community. *Scientific Publ. Cleveland Mus. Nat. Hist.*, 6, reprinted from *Ecological Monographs*, 6: 1-92, 16 text-figs., July 1936.—This is an intensive study of the ecology of a 65-acre section of North Chagrin Reservation near Cleveland, Ohio. The area is wooded with beech and maple as a climax forest. The botanical elements as well as the animals occurring in the area have been considered in their interrelations, with the conclusion naturally, that an account "of either without the other is incomplete." Among many notes on the bird population, the nearly contiguous territories of sixteen pairs of Hooded Warblers are mapped; at the same time the author shows that "territories" may be separated by vertical as well as by horizontal extent, and cites a case of a Red-eyed Vireo's nest seventy feet up in a large beech tree, while almost directly below it, was the nest of a second pair in a beech sapling six feet from the ground. "One vireo pair had a tree-top territory, the other almost a ground-level territory." Population counts carried on over four years show various interesting fluctuations as well as relative proportions of the different species constituting the average bird fauna of the area described.
- WINTERBOTTOM, J. M. Distributional and other notes on some northern Rhodesian birds. *Ibis*, (13) 6: 763-791, Oct. 1936.—Brief notes on various birds seen. *Stephanibyx lugubris* and *Tringa ochropus* are recorded for the first time from Rhodesia. A Laughing Dove pursuing an Orange-breasted Bush Shrike "with great determination," may have had a nest near; early arrival of European Bee-eaters in 1934 was coincident with the appearance of large swarms of locusts which they were following. The Black-breasted Barbet is found to nest just before and during the rains. The female of the small flycatcher, *Batis molitor*, takes the active part in pursuing the male during courtship, a reversal of the usual habit, correlated with her brighter colors.
- WOOD JONES, FREDERIC. The wanderings of albatrosses. *The Emu*, 36: 103-105, pl. 14, Oct. 1, 1936.—While it is seldom possible to identify single birds following ships on successive days, one Black-footed Albatross, believed to be the same individual, was seen following a ship from near Honolulu for two days, covering seven degrees of latitude toward Vancouver. Reviewing North Atlantic records of the Wandering Albatross, the author believes some of these are of birds captured

at sea and carried north by sailors. A V-shaped piece of tin is often used by sailors, trailed astern with a bait. The bird in seizing the bait, catches its bill in the tip of the V and is hauled aboard. The sides of the V cut a nick in the bird's hooked beak. A specimen found dead at Hull, England, was so marked.

The Auklet, vol. 1, no. 2, 27 pp., Pittsburgh, Pa., actual date of publication October 21, 1936.—While clearly intended as a wholly humorous effort at parody on its greater cousin, the current number of this dwarf counterpart contains (page 12) an article in which A. Nonymous, the author, proposes *Plautulus incomparabilis* as a new genus and species expressly to designate "the bird whose figure adorns the cover of this magazine." The description given, in spite of defects, constitutes an "indication," while the figure referred to is a recognizable drawing of the Crested Auklet. Hence the new name acquires technical status as a homonym of *Aethia cristatella* and must henceforth be quoted as such in any complete synonymy of that bird! While in the present instance no further complications of nomenclature seem likely to arise, nevertheless should future numbers of this journal be contemplated, care must be taken lest legitimate humor exceed the bounds of scientific propriety.

The following mimeographed journals have been received:

- Inland Bird Banding News**, vol. 8, no. 3, Sept. 1936.
- Long Island Bird Notes**, vol. 3, nos. 36-42, 1936.
- News from the Band Banders**, vol. 11, no. 3, Aug. 1936.
- News Letter, Audubon Society of Missouri**, vol. 3, nos. 9-10, 1936.
- The Prothonotary**, vol. 2, nos. 9-10, Sept. and Oct. 1936.
- The Redstart**, vol. 3, nos. 10-11, July and Aug. 1936.

CORRESPONDENCE

"Mating" and "Coitus"

Editor of 'The Auk':

In reading papers on bird behavior I have noticed occasionally the use of the words "mate" and "mating" where "copulate" and "copulation" or "coition" or "coitus" would be expected in scientific writing. Usually it is obvious from the context whether "mate" or "mating" refers to the physiological act or to the psychological process of choosing or accepting a mate, but sometimes the exact significance of the word is not clear. May I suggest, therefore, that writers do away with the euphemism and use the unequivocal scientific term when that is called for, reserving the other for the purely psychological behavior?

FRANCIS H. ALLEN

West Roxbury, Mass.

Local Bird Names Wanted

Editor of 'The Auk':

The Biological Survey has long been compiling the vernacular names of the birds of the A. O. U. Check-list, with a view to preparing a dictionary of them. These names fall into two groups: (1) those available from the literature of ornithology, which is largely accessible in Washington; and (2) those that must be collected in the field. Only by thoroughly covering the country can the compilation of the local vernacular names attain anything like completeness, and this can be achieved through coöperation only.

It is hoped that all readers of this memorandum may have local names to contribute and that some may be in a position to spend time in search of vernacular names. Accurate identification is of prime importance. In gathering local names by the method of interviewing, it is suggested that use be made of good colored pictures of the birds concerned as well as of questions regarding their identity.

The recording of the locality where a name is used is of great value in the study of the origin and migration of these terms, and record of names actually employed by the people, even for the most common as well as for more unusual species of birds, is highly desirable as an aid in appraising usage. The information requested may be conveniently recorded under either the standard scientific name or the vernacular name, or both, followed by locally used terms and designation of the place of use. Example:—

NORTHERN FLICKER (*Colaptes auratus luteus*)

Flying Auger, Martha's Vineyard, Mass.

Coöperation in improving the extent and quality of the Survey's collection of vernacular names of birds will be much appreciated. Names may be sent to the Biological Survey, U. S. Department of Agriculture, Washington, D. C., for the attention of W. L. McAtee, Technical Adviser.

IRA N. GABRIELSON, *Chief*

U. S. Biological Survey,
Washington, D. C.

NOTES AND NEWS

WITH the conclusion of volume 53 of 'The Auk', Dr. Witmer Stone passes on the editorship to other hands, thus rounding out a full quarter century of devoted service on its behalf. It is difficult for one unused to such work to appreciate the vast amount of effort and worry, of red ink and black, of skill and tact that this long and honorable record implies. In the administration of his duties Doctor Stone has won the gratitude and admiration of ornithologists the world over.

Need of an Endowment Fund for 'The Auk'

THE American Ornithologists' Union has been growing progressively short of funds during the past several years. The membership has fallen off, fewer life memberships have been taken out, and the sale of its publications has not come up to expectations. A large part of our funds have been tied up in the new Check-list, the Ten-year Index of the Auk, the fifty-year memorial volume and the Abridged Check-list. The reasons are obvious; the prolonged depression has reduced incomes and necessitated economies for many of us. But, now that business conditions are improving, we hope for better times. Current bills for the publication of 'The Auk' are not being paid with reasonable promptness, and this situation is growing progressively worse. The Editor of 'The Auk' has abundant good material which he is unable to publish for lack of funds. We must have more income if we are to maintain the high standard and the full size of our official journal. There are several ways in which our members can help to accomplish this. We need more Associate Members; those who join during the year and pay their dues will receive 'The Auk' for 1937, though they cannot be formally elected until next fall.

Members, who can afford to do so, are urged to become Life Members; the income from the Life Membership Fund is devoted to the publication of 'The Auk' or other publications of the Union.

Several of our former members have left to the Union bequests in their wills, as memorial funds, the income to be used for publications. We urge our members to give this matter serious consideration.

If we want our organization and our journal to flourish, we must all do our part to secure more members, induce some of our present members to become Life Members, purchase more of our publications, or make voluntary contributions to our permanent endowment funds.—A. C. BENT, *President*.

THE ninth International Ornithological Congress will be held at Rouen, France, in the spring of 1938. At the Pittsburgh meeting of the American Ornithologists' Union, M. Jean Delacour, the secretary of the congress, extended to American ornithologists a cordial invitation to attend. Under the rules of the congress, all those who register and pay the subscription of one hundred francs gold, are enrolled as members.

THE FIFTY-FOURTH STATED MEETING OF THE
AMERICAN ORNITHOLOGISTS' UNION

BY T. S. PALMER

THE second Pittsburgh meeting, held October 19-22, 1936, was well attended by members and visitors from widely separated places. Headquarters were at the Hotel Schenley where the business sessions and the annual dinner were held. The public sessions were held in the lecture hall and gallery of botany of the Carnegie Museum.

Business Sessions:—The meetings on Monday included two sessions of the Council, a meeting of the Fellows at 4 p.m., and a meeting of the Fellows and Members at 8 p.m. At the meeting of the Fellows, H. L. Stoddard, G. M. Sutton, and Josselyn Van Tyne were elected to fill vacancies in the list, and at the evening meeting attended by 26 Fellows and 30 Members, 7 Members were added to the list. The report of the Secretary showed a total membership of about 2000; the Treasurer reported receipts of \$7129.66, disbursements of \$6499.13, and a balance of \$630.53 on hand September 30, 1936; while the report of the Trustees presented in detail the condition of the permanent funds of the Union.

The elections resulted in the addition of three Fellows, one Corresponding Fellow, seven Members, and 196 Associates. The officers and Council of 1935 were all re-elected, and under the new By-laws two Members, W. I. Lyon and James Savage, were added to the Council.

The most important business transacted was the adoption of ten amendments to the By-laws designed to give additional privileges to Members and to expedite elections at the annual meetings. Members may now hold the offices of Secretary, Treasurer and Member of the Council. The Council was increased to nine members, divided into three groups, serving for one, two, and three years, respectively, and the two additional places were filled by Members. Fellows and Members are now elected by a two-thirds instead of a three-fourths vote of those present. Retired Fellows are known as Fellows Emeritus, and officers, instead of assuming office immediately upon election, retire at the close of the meeting at which their successors are elected or when their successors qualify.

Dr. Witmer Stone retired as Editor of 'The Auk' after 25 years service and Dr. Glover M. Allen was elected as his successor. The usual contribution was made to the Zoological Society of London in support of the 'Zoological Record,' and appreciation of the numerous courtesies extended to the Union was expressed by the adoption of resolutions to the Director of the Carnegie Museum, the Local Committee on Arrangements, and the Board of State Game Commissioners.

Charleston, South Carolina, was selected as the place of the next meeting to be held in October, 1937.

Public Meetings:—The public meetings opened on Tuesday morning with an address of welcome by Dr. Andrey Avinoff, Director of the Carnegie Museum, and a response on behalf of the Union by the President of the Union.

The program included 60 papers, of which eight were read by title, and as usual covered a wide range of subjects both popular and technical. The opening session was devoted partly to papers on foreign birds and partly to memorial addresses. By a fortunate circumstance, one of the Honorary Fellows, M. Jean Delacour, Secretary of the Ninth International Ornithological Congress, was present and extended in person a cordial invitation to attend the Congress which will be held in Rouen, France, in May, 1938. An attractive program is in course of preparation and it is expected that the meetings will be followed by an excursion to the Camargue in southern France.

Exhibits:—Two exhibits were attractively arranged in the Museum near the entrance to the lecture hall. One comprised a series of excellent paintings of western Pennsylvania birds by George Miksch Sutton, representing some of the best work of that well-known bird artist. The other, supplementing the paper by B. H. Christy, contained letters, manuscripts, portraits, and publications of Dr. Jared Potter Kirtland. This exhibit showed how important it is to have more than a single portrait to gain an adequate idea of the appearance of a person and to show how he looked at different periods of his life. A stranger looking at the pictures of Dr. Kirtland at different ages would hardly believe that they all represented the same individual.

Social Events:—The social events began with a dinner for the Fellows on Monday evening at which 24 were present. On Tuesday evening an informal reception was held in the Carnegie Museum when the art galleries and laboratories were open for inspection; later in the evening Albert R. Brand showed a series of sound pictures of birds illustrating the latest developments in this new field of photography. Wednesday evening was occupied by the annual dinner which was held in the banquet hall of the Hotel Schenley, where 264 members and guests were present. After the dinner several short talks were given and a resolution of appreciation adopted by the Council, was presented to the retiring Editor, Dr. Witmer Stone, in recognition of his twenty-five years of continuous and arduous work in editing 'The Auk' and other publications of the Union. The evening closed with a series of scenes from the lives of Audubon, Rafinesque, and Wilson, presented by local talent.

Excursion:—For the outing on Friday, Pymatuning Lake was selected,

about 100 miles from Pittsburgh, now one of the important game refuges of the State. The former swamp has been converted into a reservoir or lake by the construction of two dams and is now the resort of waterfowl and marsh birds which spread out over the northwestern corner of Pennsylvania and into the adjoining section of Ohio as well, so that it serves practically as an interstate refuge. As a preparation for the trip an excellent account of 'Recent Developments in the Bird Life of the Pymatuning Region' was given by Miss Ruth Trimble on the day preceding the excursion. Transportation was arranged by motor cars which left the headquarters about 8 a.m. Despite cloudy skies and chilly weather, the outing was attended by about 60 persons. The list of birds numbered 57 species, including 15 kinds of ducks and a number of land and marsh birds which are usually present in late October.

THE PROGRAM

Papers are arranged in the order in which they were presented at the meeting. Those marked with an asterisk (*) were illustrated by lantern slides; those marked with a dagger (†) were illustrated by motion pictures.

TUESDAY MORNING

Welcome by Dr. Andrey Avinoff, Director of the Carnegie Museum.

Response on behalf of the American Ornithologists' Union by A. C. Bent, President of the Union.

Roll Call of Fellows and Members, Report of the Business Meeting, Announcement of the Result of Elections.

Report of the Local Committee on Arrangements. W. E. CLYDE TODD, Carnegie Museum, *Chairman*.

Report of the Committee on Classification and Nomenclature of North American Birds. ALEXANDER WETMORE, Asst. Secretary Smithsonian Institution, *Chairman*. (Read by title.)

Report of the Committee on Biography and Bibliography. T. S. PALMER, Washington, D. C., *Chairman*.

Report of the Committee on Bird Protection. HAROLD C. BRYANT, National Park Service, Washington, D. C., *Chairman*.

1. In a City Wilderness. L. L. SNYDER, Royal Ontario Museum, Toronto. (10 min.)
2. The Ninth International Ornithological Congress. JEAN DELACOUR, Chateau de Clères, France. (15 min.)
3. Migration of Hummingbirds. W. E. SAUNDERS, London, Ontario. (10 min.)
4. The Sage of Rockport (Jared Potter Kirtland). BAYARD H. CHRISTY, Sewickley, Pa. (30 min.)
5. In Memoriam: William Harry Bergtold. A. K. FISHER, Washington, D. C. (30 min.)
6. In Memoriam: Harry Schelwald Swarth. JOSEPH MAILLIARD, San Francisco, California. (Read by title.)

TUESDAY AFTERNOON

7. Proposed Fellowship Researches involving Preservation of Threatened Species. JOHN H. BAKER, Nat. Assoc. Audubon Societies, New York City. (25 min.)
8. *The Great White Heron in 1936. ALEXANDER SPRUNT, JR., Nat. Assoc. Audubon Societies, Charleston, S. C. (30 min.)
9. *The Birds of the New Guinea Region. ERNST MAYR, American Museum Natural History, New York City. (25 min.)
10. †Ornithological Field Observations of the Byrd Antarctic Expedition, II. ALTON A. LINDSEY, Cornell University, and PAUL A. SIPLE, Clark University. (30 min.)
11. *A New Type of Bird Habitat Group. ARTHUR A. ALLEN, Cornell University, Ithaca, N. Y. (25 min.)

WEDNESDAY MORNING—GENERAL SESSION

12. Nest Parasitism of Hawks. WILLIAM DUNLAP SARGENT, Westport, Conn. (15 min.)
13. *A Study of a Virginia Rail and Sora Rail at their Nests. HENRY MOUSLEY, Montreal, Canada. (Read by title.)
14. New Light on Mark Catesby. DR. ELSA G. ALLEN, Ithaca, N. Y. (25 min.)
15. *Homing Instincts of Birds. W. I. LYON, Waukegan, Ill. (20 min.)
16. *The Returning of Nesting Ovenbirds. HARRY W. HANN, University of Michigan, Ann Arbor, Mich. (15 min.)
17. Do Young Birds Return to the Place of their Birth? MRS. MARGARET M. NICE, Chicago, Ill. (15 min.)
18. *A Possible Sex Difference in the Plumage of the Aleutian Sandpiper. T. M. SHORTT, Royal Ontario Museum, Toronto. (10 min.)
19. A Study of the Seasonal Distribution of the Bird Population of a Selected Area in South China. ROBERT C. MILLER, University of Washington, Seattle, Wash. (15 min.)
20. *Development of Eider Down Production in Quebec. HARRISON F. LEWIS, Canadian National Parks, Ottawa. (10 min.)
21. *A Preliminary Report of the Rate of Heart Beat of Birds. EUGENE P. ODUM, Baldwin Bird Research Laboratory, Gates Mills, Ohio. (15 min.)
22. Comparison of the Development Rate Rhythm in Nests of 2, 3, 4, and 5 Eggs of the Black Skimmer. DR. ALICE L. BROWN, Washington, D. C. (Read by title.)

WEDNESDAY MORNING—TECHNICAL SESSION

23. An Apparent Case of Orthogenesis in *Empidonax*. PIERCE BRODKORB, University of Michigan, Ann Arbor, Mich. (15 min.)
24. Observations on Winter Habits and Migrations of Willow and Rock Ptarmigan. R. M. ANDERSON, National Museum of Canada, Ottawa. (15 min.)
25. Banding as an Aid to the Life History Study of the Turkey Vulture. VICTOR COLES, Ithaca, N. Y. (15 min.)
26. Critical Remarks on the Long-billed Marsh Wren. W. E. CLYDE TODD, Carnegie Museum, Pittsburgh, Pa. (10 min.)
27. Notes on the Clapper Rails. HARRY C. OBERHOLSER, Biological Survey, Washington, D. C. (20 min.)
28. Food Remains from a Barn Owl's Nest. FRANK R. SMITH, Hyattsville, Md. (15 min.)

29. Food Studies of the Passenger Pigeon. PHOEBE M. KNAPPEN, Biological Survey, Washington, D. C. (15 min.)
30. The Extension of the Range of the Black Vulture. J. J. MURRAY, Lexington, Va. (Read by title.)
31. Interesting Aspects of the Distribution of the Starling. J. T. NICHOLS, American Museum Natural History, New York City. (Read by title.)

WEDNESDAY AFTERNOON

32. *The Behavior of the Black Skimmer at Cardwell Island, Va. OLIN SEWALL PETTINGILL, JR., Carleton College, Northfield, Minn. (20 min.)
33. †Birds of the Colorado Prairies. ROBERT J. NIEDRACH, Colorado Museum Natural History, Denver, Colo. (30 min.)
34. †Birds of the Colorado Mountains. ALFRED M. BAILEY, Colorado Museum Natural History, Denver, Colo. (30 min.)
35. †High Speed Photographs of Hummingbirds. (Pictures by Harold E. Edgerton and Charles H. Blake, Mass. Institute of Technology.) JOHN B. MAY, Cohasset, Mass. (30 min.)
36. †More Minnesota Birds in Color. T. S. ROBERTS and W. J. BRECKENRIDGE, University of Minnesota, Minneapolis, Minn. (30 min.)
37. †Habits of the Snakebird. JOHN B. MAY, Cohasset, Mass. (10 min.)

THURSDAY MORNING—GENERAL SESSION

38. *Variable Area Recording as a Medium in Bird Sound Photography. ALBERT R. BRAND, Cornell University, Ithaca, N. Y. (10 min.)
39. Cardinal Grosbeak Eastern versus Cardinal Grosbeak Louisianian. WILLIAM C. HERMAN, Cincinnati, Ohio. (10 min.)
40. A Survey of the Nesting Bald Eagles in Southeastern Florida. JOSEPH C. HOWELL, Cornell University, Ithaca, N. Y. (10 min.)
41. *The Bald Eagles of Maryland and Virginia. W. BRYANT TYRRELL, Catonsville, Md. (30 min.)
42. A Springtime Visit to the Mississippi Kite Country of Oklahoma. GEORGE M. SUTTON, Cornell University, Ithaca, N. Y. (15 min.)
43. What Birds need Drinking Water? JOSSELYN VAN TYNE and MILTON B. TRAUTMAN, University of Michigan, Ann Arbor, Mich. (20 min.)
44. *Recent Developments in the Bird-life of the Pymatuning Region, Western Pennsylvania. RUTH TRIMBLE, Carnegie Museum, Pittsburgh, Pa. (20 min.)
45. The Spelling of the Common Names of Birds. W. H. CHEESMAN and PAUL H. OEHSE, Washington, D. C. (Read by title.)
46. *Food Habits of North American Diving Ducks. CLARENCE COTTAM, Biological Survey, Washington, D. C. (20 min.)

THURSDAY MORNING—TECHNICAL SESSION

47. *Results from Banding European Cormorants. HARRISON F. LEWIS, National Parks of Canada, Ottawa. (15 min.)
48. *The Incubation Period and so-called Injury-feigning Habit of the Spotted Sandpiper (*Actitis macularia*). HENRY MOUSLEY, Montreal, Canada. (30 min.)
49. *Some Food Tendencies of San Francisco Barn Owls. CLARENCE SMITH, Biological Survey, Washington, D. C. (15 min.)

50. *Food Habits of the Ruffed Grouse. THOMAS SMYTH, State Teachers College, Indiana, Pa. (15 min.)
51. *The *Vagabondia* Cruise to South America. REINHOLD L. FRICKE, Carnegie Museum, Pittsburgh, Pa. (30 min.)
52. The Gannets of Funk Island. E. THOMAS GILLIARD, American Museum Natural History, New York City. (Read by title.) (10 min.)
53. The Work of the Soil Conservation Service. ERNEST G. HOLT, Soil Conservation Service, Washington, D. C. (Read by title.)

THURSDAY AFTERNOON

54. *Salvaging Wild-life Habitats. VICTOR H. CAHALANE, National Park Service, Washington, D. C. (15 min.)
55. *Effect of Mosquito Control on the Ecology of Salt Marsh Birds. WILLIAM VOGT, Nat. Assoc. Audubon Societies, New York City. (30 min.)
56. *Abundance of Raptorial Birds in the Lava Beds National Monument, Modoc Co., Calif. JOSEPH S. DIXON and RICHARD M. BOND. (Read by J. O. STEVENSON), National Park Service, Washington, D. C. (15 min.)
57. *Flock Movements of Herons, Egrets, and Ibises. ROBERT P. ALLEN, Nat. Assoc. Audubon Societies, New York City. (30 min.)
58. *Some Conclusions from the Study of the Life History of the Atlantic Murre. R. A. JOHNSON, State Normal School, Oneonta, N. Y. (40 min.)
59. Territorial Habits of the Atlantic Murre—a Colonial Species. R. A. JOHNSON, State Normal School, Oneonta, N. Y. (Read by title.)
60. †Motion Pictures of Bald Eagles and Bob-white. I. H. JOHNSTON, Conservation Commission, Charleston, W. Va. (30 min.)

ATTENDANCE

The second Pittsburgh meeting was considerably larger than that held there in 1924, when 140 members and visitors were present. The list of those present in 1936 included one Patron, 27 Fellows, one Honorary Fellow, 40 Members, 122 Associates, and 52 visitors, making a total of 243, of whom 174 were included in the group photograph.

A marked decrease in the number of registered visitors was noticeable as compared with the record of the meeting of 1935, but on the other hand the attendance showed a wider geographic distribution. Representatives were present from 26 States, the District of Columbia, four Provinces of Canada, and from France. Only a single Founder was present and he holds the record for attendance, having attended 49 meetings. Two Fellows were present who were elected at the first meeting 53 years ago. California was represented by three members, and Oregon, Washington, and Wyoming by one each.

Fifteen colleges or universities and sixteen museums were represented.

ARIZONA, 1—*Associate*, C. T. Vorhies, Tucson.

CALIFORNIA, 3—*Member*, R. T. Moore, Pasadena; *Associates*, J. R. Arnold, Fresno; Dirk Benson, Ukiah.

COLORADO, 2—*Fellow*, A. M. Bailey; *Associate*, R. J. Niedrach, Denver.

- CONNECTICUT, 2—*Associates*, Miss Margaret Brooks, Old Greenwich; W. D. Sargent, Westport.
- DISTRICT OF COLUMBIA, 19—*Fellows*, A. K. Fisher, Herbert Friedman, A. H. Howell, F. C. Lincoln, H. C. Oberholser, T. S. Palmer, E. A. Preble; *Members*, H. C. Bryant, Clarence Cottam, I. N. Gabrielson; *Associates*, V. H. Cahalane, A. J. Duvall, Miss P. M. Knappen, P. H. Oehser, Mrs. T. S. Palmer, C. F. Smith, R. N. Saxton, J. O. Stevenson, Howard Zahniser, Washington.
- FLORIDA, 1—*Associate*, J. C. Howell, Orlando.
- ILLINOIS, 10—*Patron*, Mrs. Ruthven Deane, Winnetka; *Fellow*, W. H. Osgood, Chicago; *Members*, Rudyerd Boulton, H. B. Corover, Mrs. M. M. Nice, Chicago; W. I. Lyon, Waukegan; *Associates*, Mrs. A. G. Baldwin, E. R. Blake, G. G. Wright, Chicago; W. S. Feeney, Oak Park.
- INDIANA, 1—*Associate*, S. E. Perkins, 3d., Indianapolis.
- IOWA, 2—*Member*, T. C. Stephens, Sioux City; *Associate*, C. E. Gillham, Ames.
- KENTUCKY, 1—*Associate*, C. P. Grant, Covington.
- MAINE, 2—*Fellow*, A. O. Gross, Brunswick; *Associate*, R. S. Palmer, Orono.
- MARYLAND, 4—*Associates*, W. C. Henderson, Chevy Chase; F. C. Kirkwood, Phoenix, F. R. Smith, Hyattsville; W. B. Tyrrell, Catonsville.
- MASSACHUSETTS, 6—*Fellows*, G. M. Allen, Cambridge; A. C. Bent, Taunton; J. L. Peters, Harvard; *Members*, J. C. Greenway, Jr., Cambridge; J. B. May, Cohasset; *Associate*, Mrs. R. B. Harding, Brookline.
- MICHIGAN, 12—*Fellow*, Josselyn Van Tyne, Ann Arbor; *Member*, M. J. Magee, Sault Ste. Marie; *Associates*, G. A. Ammann, Pierce Brodtkorb, H. W. Hann, T. D. Hinshaw, Ralph Morrill, Ann Arbor; W. H. MacCracken, Detroit; Mr. and Mrs. F. M. Baumgartner, B. J. Bujak, East Lansing; Mrs. E. K. Frey, Jackson.
- MINNESOTA, 4—*Fellow*, T. S. Roberts; *Member*, W. J. Breckenridge; *Associates*, G. A. Swanson, Minneapolis; O. S. Pettingill, Jr., Northfield.
- NEW JERSEY, 5—*Members*, B. S. Bowdish, Demarest; C. H. Rogers, Princeton; J. F. Street, Beverly; *Associates*, R. W. Storer, South Orange; L. L. Walsh, Ridgewood.
- NEW YORK, 31—*Fellows*, A. A. Allen, Ithaca; R. C. Murphy, J. T. Zimmer, New York; *Members*, A. R. Brand, White Plains; Verdi Burtch, Branchport; F. L. Jaques, Ernst Mayr, Mrs. W. W. Naumberg, T. G. Pearson, R. T. Peterson, William Vogt, New York; James Savage, Buffalo; Dayton Stoner, Albany; *Associates*, Mrs. A. A. Allen, Mrs. A. R. Brand, Victor Coles, A. A. Lindsey, E. J. Sawyer, Albert Wolfson, Ithaca; R. P. Allen, J. H. Baker, Mrs. R. C. Murphy, W. W. Naumberg, Miss Theodora Nelson, New York; H. H. Axtell, Paul Kellogg, Cortland; Prof. Hazel R. Ellis, Keuka Park; Miss Mary K. Heydweiller, Rochester; R. A. Johnson, Oneonta; R. H. LeFevre, H. D. Mitchell, Buffalo.
- OHIO, 13—*Fellow*, F. H. Herrick, Cleveland; *Member*, L. E. Hicks, Columbus; *Associates*, W. C. Baker, Salem; R. D. Book, Corning; H. W. Brandt, F. W. Braund, E. P. McCullagh, E. P. Odum, Cleveland; G. M. Cook, Youngstown; W. C. Herman, Cincinnati; F. M. Phelps, Elyria; P. A. Stewart, Leetonia; Richard Weaver, Toledo.
- PENNSYLVANIA, 36—*Fellows*, Witmer Stone, Philadelphia; W. E. C. Todd, Pittsburgh; *Members*, B. H. Christy, Sewickley; Francis Harper, Swarthmore; Wharton Huber, George Stuart, 3d., Philadelphia; J. W. Jacobs, Waynesburg; *Associates*, C. T. Agostini, R. L. Frecke, G. A. Link, Jr., J. K. Musgrave, M. G. Netting, J. M. Phillips, R. H. Reiber, R. H. Sautens, G. B. Thorp, Miss Ruth Trimble, Pittsburgh; D. C. Baird, Jr., Shields; E. A. Davis, Jr., Aliquippa; W. E. Dilley, A. J.

Woodward, Erie; A. C. Emlen, N. J. McDonald, R. M. Pough, Mrs. Witmer Stone, E. S. Weyl, Philadelphia; G. J. Tree, State College; E. H. Manly, New Kensington; A. W. Robinson, Miss R. G. Robinson, Haverford; S. J. Seipell, Greenville; J. B. Semple, Sewickley; F. R. Smith, Fredericktown; Thomas Smyth, Indiana; H. T. Underdown, Elkins Park.

SOUTH CAROLINA, 1—*Member*, Alexander Sprunt, Jr., Charleston.

TENNESSEE, 1—*Member*, A. F. Ganier, Nashville.

VERMONT, 1—*Associate*, W. P. Smith, Wells River.

VIRGINIA, 2—*Fellow*, W. L. McAtee, Arlington; R. W. Williams, East Falls Church.

WASHINGTON, 1—*Associate*, R. C. Miller, Seattle.

WEST VIRGINIA, 5—*Fellow*, G. M. Sutton, Bethany; *Associates*, Maurice Brooks, Morgantown; J. W. Handlaw, Wheeling; I. H. Johnston, Charleston; J. L. Poland, Martinsburg.

WISCONSIN, 1—*Associate*, Miss I. M. Schwandt, Wauwatosa.

WYOMING, 1—*Associate*, A. B. Mickey, Laramie.

ALBERTA, 2—*Associates*, F. L. Farley, A. C. Twomey, Camrose.

NOVA SCOTIA, 1—*Associate*, R. W. Smith, Wolfville.

ONTARIO, 16—*Fellows*, J. H. Fleming, Toronto; Hoyes Lloyd, P. A. Taverner, Ottawa; W. E. Saunders, London; *Members*, R. M. Anderson, H. F. Lewis, Ottawa; J. L. Baillie, L. L. Snyder, Toronto; *Associates*, F. H. Emery, E. G. McDougall, T. M. Shortt, J. M. Speirs, Toronto; Miss L. R. Kingston, Mrs. Hoyes Lloyd, Ottawa; W. H. Lunn, Hillier; Mrs. F. E. MacLoghlin, Hamilton.

QUEBEC, 2—*Member*, Henry Mousley; *Associate*, J. A. Decarie, Montreal.

FRANCE, 2—*Honorary Fellow*, J. T. Delacour, Clères; *Associate*, F. E. Blanc, Paris.

ELECTION OF OFFICERS

The election of officers for 1937 resulted as follows: President, A. C. Bent; Vice-Presidents, Herbert Friedmann and James P. Chapin; Secretary, T. S. Palmer; Treasurer, W. L. McAtee; Members of Council (in addition to officers and ex-presidents), for one year, John T. Zimmer, W. I. Lyon, James Savage; for two years, H. C. Oberholser, T. S. Roberts, P. A. Taverner; for three years, A. A. Allen, W. H. Osgood, J. L. Peters.

The Council elected Glover M. Allen, Editor of 'The Auk'; W. L. McAtee, Business Manager; George H. Stuart, 3d., C. H. Riker and Edward Norris, Trustees; and A. C. Bent, S. S. Gregory, Jr., Ludlow Griscom, W. L. McAtee, and T. S. Palmer, members of the Finance Committee.

ELECTION OF FELLOWS, MEMBERS AND ASSOCIATES

FELLOWS—3.

Herbert Lee Stoddard, Thomasville, Ga.

George Miksch Sutton, Bethany, W. Va.

Josselyn Van Tyne, Ann Arbor, Mich.

CORRESPONDING FELLOW—1.

Dr. Edgardo Moltoni, Milan, Italy.

MEMBERS—7.

Paul Lester Errington, Ames, Iowa.

Edward Russell Ford, Chicago, Ill.

Lawrence Emerson Hicks, Columbus, Ohio.

Ernst Mayr, New York, N. Y.

Joseph James Murray, Lexington, Va.

William Vogt, New York, N. Y.
Vero Copner Wynne-Edwards, Montreal, P. Q.

ASSOCIATES—196.

The names of Associates who have qualified will appear in 'The Auk' for April, 1937.

DECEASED MEMBERS

During the year the Union lost 28 members by death—1 Fellow, 8 Corresponding Fellows, 1 Member, and 18 Associates.

WILLIAM HARRY BERGTOLD,¹ Fellow, aged 70, died in Denver, Colo., March 19, 1936.
WILLIAM LOUIS ABBOTT,² Corresponding Fellow, aged 76, died at Northeast, Md., Apr. 2, 1936.

ENRIQUE LYNCH ARRIBALZAGA,³ Corresponding Fellow, died in his 79th year at Resistencia, Argentina, June 28, 1935.

FRANS ERNST BLAAUW, Corresponding Fellow, aged 75, died at Gooilust, Holland, Jan. 17, 1936.

ALBERT COLLIN, Corresponding Fellow, of Turku, Finland, died 1935?

KALMAN LAMBRECHT, Corresponding Fellow, aged 47, died at Budapest, Hungary, Jan. 6, 1936.

LOUIS LAVAUDEN,⁴ Corresponding Fellow, aged 54, died at Anjou, Isère, France, Sept. 1, 1935.

MICHAEL ALEXANDROVICH MENZBIER, Corresponding Fellow, aged 80, died in Moscow, U. S. S. R., Oct. 10, 1935.

BARON RENÉ CHARLES EDUARD GEORGE JEAN SNOUKAERT VON SCHAUBURG, Corresponding Fellow, aged 79, died at Territet, Switzerland, Aug. 20, 1936.

JOHN WARD MAILLIARD, Member, aged 74, died in San Francisco, Calif., Jan. 9, 1936.

CHARLES EDWARD HOWARD AIKEN,⁵ Hon. Life Associate, aged 85, died at Colorado Springs, Colo., Jan. 15, 1936.

ARTHUR ASTLEY, Associate, of Ambleside, England, died 1936.

WILLIAM FREDERIC BADÉ, Associate, aged 65, died at Berkeley, Calif., March 4, 1936.

EDWARD MATTHEWS BALL, Associate, died in his 70th year, at Washington, D. C., Nov. 30, 1935.

EMLINE CLARK BATES, Associate, of Chicago, Ill., died 1936.

IRA EUGENE CUTLER, Associate, of Denver, Colo., died 1936.

WARREN FRANCIS EATON,⁶ Associate, died in his 36th year, at Upper Montclair, N. J., Feb. 16, 1936.

HOWARD FUGUET, Life Associate, died in Philadelphia, Pa., March 5, 1936.

THOMAS LEROY HANKINSON,⁷ Associate, died in his 60th year, at Ypsilanti, Mich., Dec. 3, 1935.

CHARLES EUGENE JOHNSON, Associate, aged 56, died at Syracuse, N. Y., June 6, 1936.

CLARK MCADAMS, Associate, aged 61, died at St. Louis, Mo., Nov. 29, 1935.

ALBERT PITTS MORSE,⁸ Associate, aged 73, died at Wellesley, Mass., Apr. 29, 1936.

¹ For obituary notice, see Auk, vol. 53, p. 369; vol. 54, p. 1.

² " " " " " " " " pp. 369-370.

³ " " " " " " " " p. 483.

⁴ " " " " " " " " p. 483.

⁵ " " " " " " " " pp. 371-372.

⁶ " " " " " " " " pp. 255-256.

⁷ " " " " " " " " p. 129.

⁸ " " " " " " " " pp. 372-373.

FRANK RICHARD OASTLER, Associate, aged 65, died in Glacier Nat. Park, Mont., Aug. 2, 1936.

WALTER BURGESS SAVARY,¹ Associate, aged 81, died at Wareham, Mass., Jan. 7, 1936.

JULIAN ELIOT SCHONNEGEL, Associate, of New York, N. Y., died 1936.

JOHN WILLIAM SUGDEN, Associate, of Salt Lake City, Utah, died Aug. 1935.

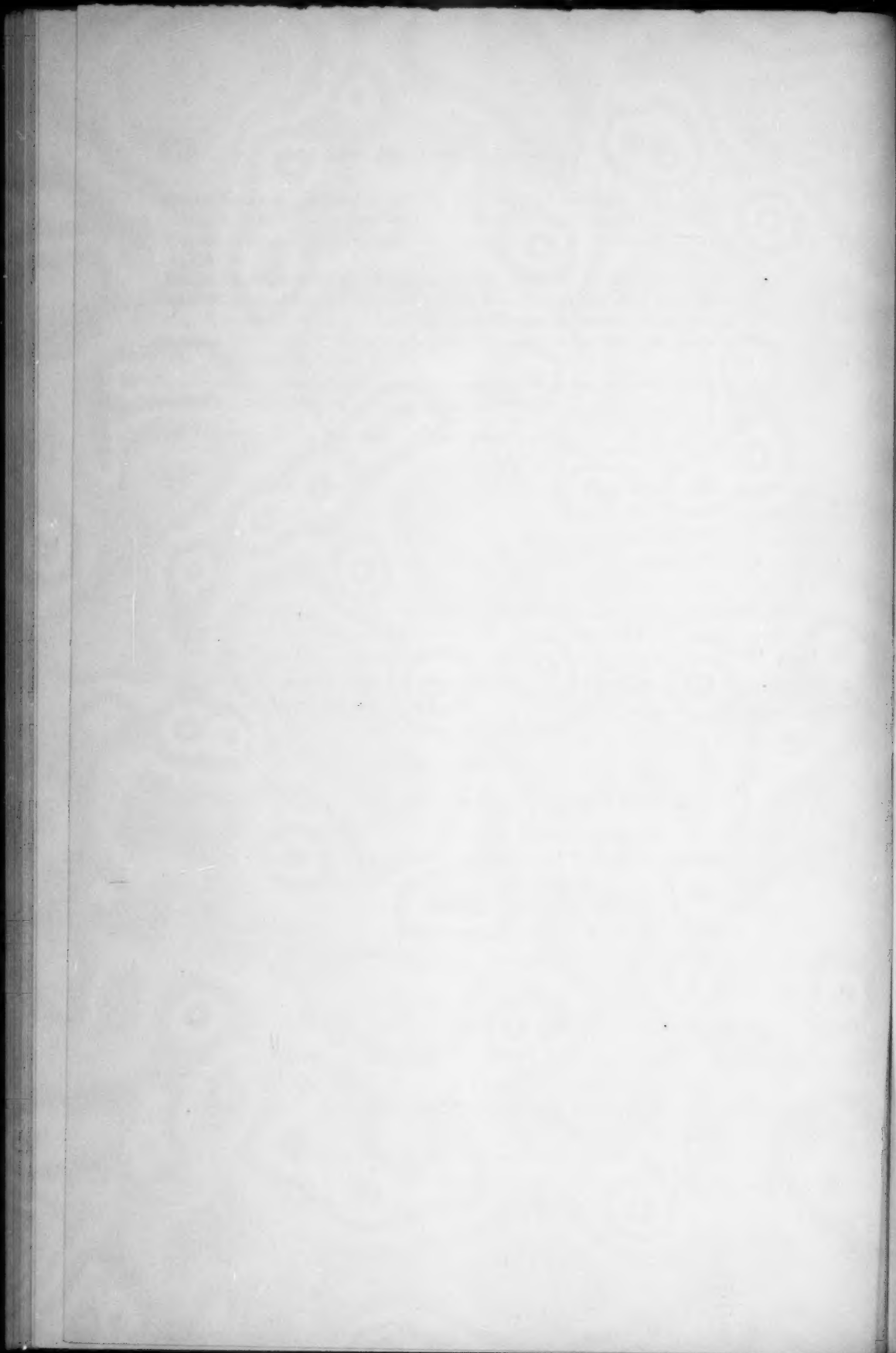
MRS. ETTA SMITH WILSON,² Associate, aged 78, died at Detroit, Mich., Jan. 5, 1936.

GEORGE MELENDEZ WRIGHT,³ Life Associate, died in his 32d year, near Deming, N. Mex., Feb. 25, 1936.

¹ For obituary notice, see Auk, vol. 53, pp. 257-258.

² " " " " " " pp. 373-374.

³ " " " " " " pp. 256-257.



THE AUK

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Edited by Dr. Glover M. Allen

MUSEUM OF COMPARATIVE ZOOLOGY

CAMBRIDGE, MASS.

To whom all articles and communications intended for publication and all books and publications for review should be sent.

Manuscripts should be typewritten if possible. As an aid in bibliography, titles should be brief. References to literature, if few, may be inserted in parenthesis at the appropriate places in the text, or listed at the end of the paper rather than in footnotes. Roman numerals and extensive tables are to be avoided. Line drawings intended for text illustrations should be in India ink; half-tones cannot be printed in the text since the paper is unsuitable. Longer articles should have a brief summary at the end. Except on request, no proofs of 'General Notes' or short communications will be submitted to authors.

Twenty-five copies of leading articles are furnished to authors free of charge. Additional copies or reprints from 'General Notes,' 'Correspondence,' etc., must be ordered from the editor when the manuscript is submitted.

THE OFFICE OF PUBLICATION

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THE AMERICAN ORNITHOLOGISTS' UNION AT A GLANCE

ORGANIZED—in New York City, Sept. 26, 1883; Incorporated—in Washington, D. C., Nov. 15, 1888.

OBJECTS: "The advancement of its members in Ornithological Science; the publication of a journal of Ornithology and other works relating to that science; the acquisition of a library; and the care and collection of materials relating to the above objects, under the restrictions and regulations established in its By-Laws."

OFFICERS: President, two Vice-Presidents, Secretary, Treasurer, and 9 Councilors. Officers and ex-Presidents are ex-officio members of the Council.

MEMBERS: Associates (unlimited), Members (125), Corresponding Fellows (100), Honorary Fellows (25), Fellows (50), Fellows Emeritus, Patrons. (Total membership in 1936 about 2000.)

DUES: Annual—Associates \$3, Members \$4, Fellows \$5.

Life-Associates \$50, Life-Members \$75, Life-Fellows \$100; Patrons \$1000.

INCOME: From annual dues, sale of publications, life memberships, and contributions.

MEETINGS: Annual—usually in October or November.

PUBLICATIONS: 'The Auk,' a quarterly journal in 53 volumes, with 4 general indexes: 1876-1900, 1901-1910, 1911-1920, 1921-1930. 'Check-list of North American Birds': 1st ed., 1886; 2d ed., 1895; 3d ed., 1910; 4th ed., 1931. 'Code of Nomenclature,' 1886; Revised ed., 1908. (See Auk, '24, 142.)

BREWSTER MEDAL: The income from a fund of \$7250, established in 1919 by the friends of William Brewster, awarded biennially to the author of the most important work relating to the birds of the Western Hemisphere published during the preceding six years. Awarded in 1921 to Robert Ridgway, in 1923 to A. C. Bent, in 1925 to Todd and Carriker, in 1927 to John C. Phillips, in 1929 to C. E. Hellmayr, in 1931 to Mrs. Florence M. Bailey, in 1933 to F. M. Chapman, and in 1935 to H. L. Stoddard.

WHERE TO FIND FURTHER INFORMATION

ADDRESSES OF OFFICERS AND MEMBERS—Annual list in April Auk.

THE AUK (LOCATION OF SETS)—Auk, '19, 634; '20, 348; '24, 207; '29, 584.

THE AUK IN PUBLIC LIBRARIES—Auk, '30, 609.

BIOGRAPHIES OF DECEASED MEMBERS—Auk, '35, lxviii.

BREWSTER MEDAL—Auk, '20, 29; '22, 86; '24, 125; '25, 484; '26, 69; '28, 71; '30, 219; '32, 52; '34, 53; '36, 57.

BY-LAWS: Auk, '27, xi.

DATES OF PUBLICATION OF THE AUK (1912-1936) follow the Index in each volume.

HISTORY OF THE UNION: Allen, J. A., 'A Seven Years' Retrospect,' 1891; 'The A. O. U.,' Bird-Lore, 1899, 143.

Palmer, T. S., 'The A. O. U.,' Am. Mus. Journal, '18, 473; 'Looking Backward,' Auk, '24, 139; Fifty years progress of American Ornithology, 1933, 7-27.

MEETINGS: Auk, '24, 143; '30, back cover of October number.

MEMBERSHIP:—Auk, '24, 140; Fellows, '18, 110; Foreign Members, '18, 266; Members, '18, 384; Associates, '18, 513.

PERMANENT FUNDS: Auk, '20, 513.